Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
UTU- 77270

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
Hjorth Canyon

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Hjorth Canyon Unit 13-16

2. Name of Operator
Ansbro Petroleum Company

9. API Well No.
43049300 21

3a. Address 555 17th Street, Suite 2500
Denver, CO 80020

3b. Phone No. *(include area code)*
303-299-1400

10. Field and Pool, or Exploratory
Wildcat

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWSW 225'FSL, 527'FWL 458335X 4417324 39.256481 -111.487083
At proposed prod. zone SWSW 225'FSL, 527'FWL

11. Sec., T. R. M. or Blk. and Survey or Area
Sec. 16, T11S, R4E, SLB&M

14. Distance in miles and direction from nearest town or post office*
Approximately 3.5 miles northeast of Indianola, UT

12. County or Parish
Utah

13. State
UT

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
230'	2436.3	40 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
None	5000'	C0-1040
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
6470' GL	10/19/2007	45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
	Keith Bonati	10/09/2007
Title: Sr. Landman		
Approved by *(Signature)*	Name *(Printed/Typed)* BRADLEY G. HILL	Date 04-09-08
Title	Office ENVIRONMENTAL MANAGER	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Federal Approval of this Action is Necessary

CONFIDENTIAL

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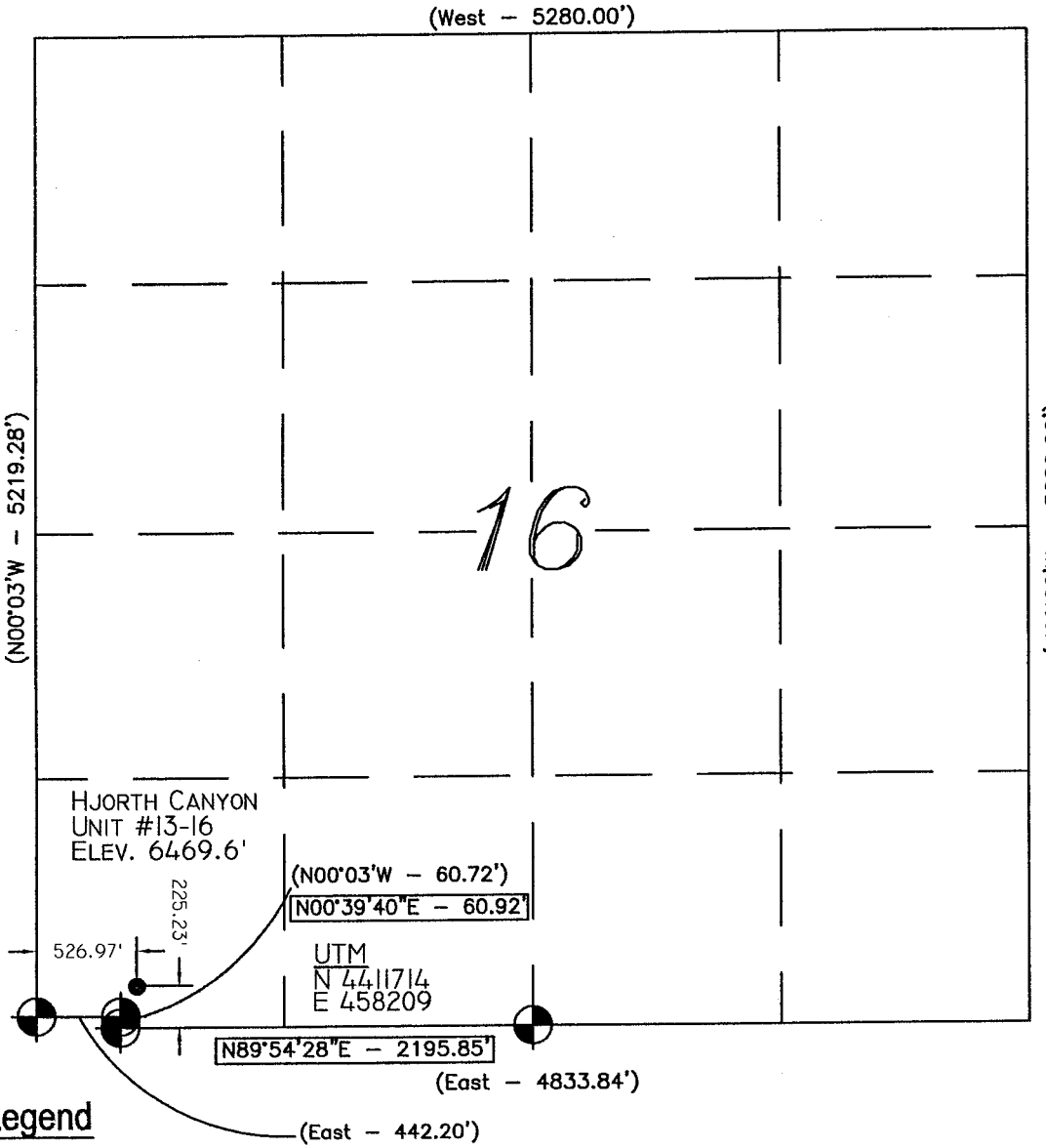
OCT 10 2007
DIV OF OIL, GAS & MINING

Range 4 East

Township 11 South



Legend

- Drill Hole Location
- Brass Cap (Found)
- Brass Cap (Searched for, but not found)
- Rock Pile
- ( ) GLO

GPS Measured

NOTES:
1. UTM and Latitude / Longitude Coordinates are derived using a GPS Pathfinder and are shown in NAD 27 Datum.

LAT / LONG
39°51'22.727" N
111°29'18.782" W

Location:
The well location was determined using a Trimble 5700 GPS survey grade unit.

Basis of Bearing:
The Basis of Bearing is GPS Measured.

GLO Bearing:
The Bearings indicated are per the recorded plat obtained from the U.S. Land Office.

Basis of Elevation:
Basis of Elevation of 5905' being at the intersection of US–89 and Hjorth Canyon Road in Section 19, Township 11 South, Range 4 East, Salt Lake Base & Meridian, as shown on the Spencer Canyon Quadrangle 7.5 Minute Series Map.

Description of Location:
Proposed Drill Hole located in the SW/4 SW/4 of Section 16, T11S, R4E, S.L.B.&M., being North 225.23' from South Line and East 526.97' from West Line of Section 16, T11S, R4E, Salt Lake Base & Meridian.

Surveyor's Certificate:
I, Albert J. Spensko, a Registered Professional Land Surveyor, holding Certificate 146652 State of Utah, do hereby certify that the information on this drawing is a true and accurate survey based on data of record and was conducted under my personal direction and supervision as shown hereon.

Registered Land Surveyor
No. 146652
Albert J. Spensko
State of Utah

GRAPHIC SCALE
0 500' 1000'
(IN FEET)
1 inch = 1000 ft.

TALON RESOURCES, INC.
615 North 400 East P.O. Box 1230
Huntington, Utah 84528
Phone (435)687-5310 Fax (435)687-5311
E-Mail talon@etv.net

ANSBRO PETROLEUM COMPANY

Hjorth Canyon Unit #13–16
Section 16, T11S, R4E, S.L.B.&M.
Utah County, Utah

Drawn By:	Checked By:
N. BUTKOVICH	L.W.J./A.J.S.
Drawing No. A–1	Date: 10/5/07
	Scale: 1" = 1000'
Sheet 1 of 4	Job No. 3088

CONFIDENTIAL – TIGHT HOLE

Onshore Oil & Gas Order No. 1

Approval of Operations on Onshore
Federal and Indian Oil & Gas Leases

Ansbro Petroleum Company
Hjorth Canyon Unit #13-16
SWSW, 225' FSL, 527' FWL
Section 16, T 11S, R4E
Utah County, Utah

Utah State Office (1)
Bureau of Land Management
440 West 200 South, Suite 500
Salt Lake City, Utah 84101
Attn: Al McKee
801) 539-4045

Salt Lake Field Office (2)
Bureau of Land Management
2370 South 2300 West
Salt Lake City, UT 84119
Attn: Larry Garahana
801-977-4371

USDA – Forest Service (1)
Manti-La Sa National Forest
Ferron/Price Ranger District
115 West Canyon Rd.
Ferron, Utah 84523
Attn: Tom Lloyd
435-636-3596

USDA – Forest Service (4)
Manti-La Sal National Forest
599 W. Price River Dr.
Price, UT 84501
Attn: Dale Harbor
435-637-2817

Utah Division of Oil, Gas & Mining (1)
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
801-538-5340

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DIV. OF OIL, GAS & MINING

APPLICATION FOR PERMIT TO DRILL OR REENTER

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
   Attached.

2. A Drilling Plan

3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the Appropriate Forest Service Office.
   See Surface Use Plan Attached.

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20).
   Bond coverage for this well is provided by Ansbro Petroleum Company under their BLM Bond No. CO-1040.

5. Operator certification.
   Please be advised that Ansbro Petroleum Company is considered to be the operator of the above mentioned well. Ansbro Petroleum Company agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the leased lands.

6. Such other site specific information and/or plans as may be required by the authorized officer.

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No.1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to insure compliance.

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

Formation Name	*TVD*	*MD*
Cretaceous Indianola Group	Surface	Surface
Cretaceous Castlegate	1100'	1100'
Jurassic Entrada	2000'	2000'
Jurassic Arapien	2525'	2525'
Jurassic Twin Creek	2975'	2975'
Jurassic Nugget	3690'	3690'
Total Depth	5000'	5000'

2. ANTICIPATED DEPTHS OF OIL, GAS, WATER AND OTHER MINERAL BEARING ZONES

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Substance	*Formation*	*Depth*
Gas with Condensate	2nd Navajo (Nugget)	3950'
Gas with Condensate	Jurassic Twin Creek	2975'

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and adequately protected. All oil and gas shows will be evaluated to determine commercial potential.

All water shows and water-bearing sands will be reported to the BLM in Salt Lake City, Utah. Copies of State of Utah form OGC-8-X are acceptable. If noticeable water flows are detected, samples will be submitted to the BLM along with any water analyses conducted.

3. **BOP EQUIPMENT/ REQUIREMENTS**

Ansbro Petroleum Company's minimum specifications for pressure control equipment are as follows:

Ram type: 11" Hydraulic double, 5,000# psi w.p.

Ram type preventers and associated equipment shall be tested to approved stack working pressure if isolated by test plug or to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at lease 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. For a test not utilizing a test plug, if a decline in pressure of more than 10 percent in 30 minutes occurs, the test shall be considered to have failed. Valve on casing head below test plug shall be open during test of BOP stack.

Annular type preventers (if used) shall be tested at 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

As a minimum, the above test shall be performed:

a. when initially installed;
b. whenever any seal subject to test pressure is broken
c. following related repairs, and
d. at 30 day intervals

Valve shall be tested from working pressure side during BOPE tests with all down stream valves open.

When testing the kill line valve(s) the check valve shall be held open or the ball removed.

Annular preventers (if used) shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip, however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

The BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order No. 2 for equipment and testing requirements, procedures, etc., and individual components shall be operable as designed. Chart recorders shall be used for all pressure tests.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log. Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to a BLM representative upon request.

Pressure tests shall apply to all related well control equipment.

BOP systems shall be consistent with API RP53. Pressure tests will be conducted before drilling out from under casing strings which have been set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection will be recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

The Salt Lake Field Office shall be notified, at least 24 hours prior to initiating the pressure test, in order to have a BLM representative on location during pressure testing.

a. The size and rating of the BOP stack is shown on the attached diagram. Although a rig has not been chosen to drill this well, most of the equipment for this depth of hole in the area use a 11', 5,000# psi working pressure blowout preventor.

b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line.

c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.

d. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

4. CASING AND CEMENTING PROGRAMS

a. The Salt Lake Field Office shall be notified at least 24 hours prior to the running and cementing of all casing strings, in order to have a BLM representative on location while running and cementing all casing strings.

b. The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including; presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. All indications of usable water shall be reported.

c. Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).

d. Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data).

e. Casing collars shall have a minimum clearance of 0.422 inches of all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

f. All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

g. All casing except the conductor casing, shall be new or reconditioned and tested used casing that meets or exceeds API standards for new casing.

h. The surface casing shall be cemented back to surface either during the primary cement job or by remedial cementing.

i. All indications of usable water shall be reported to the authorized officer prior to running the next string of casing or before plugging orders are requested, whichever occurs first.

j. Three centralizers will be run on the bottom three joints of surface casing with a minimum of one centralizer per joint starting with the shoe joint.

k. Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as suitable preflush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

l. All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

m. On all exploratory wells, and on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

n. The proposed casing program will be as follows:

Purpose	*Depth*	*Hole Size*	*O.D.*	*Weight*	*Grade*	*Type*	*New/Used*
Surface	0-1200'	17-1/2"	13-3/8"	54.5#	J55	ST&C	New
Intermediate	1200-3050"	12-1/4"	9-5/8"	40#	HCL80	LT&C	New
Production	3050-5000'	8-1/2"	7"	23#	JRR	LT&C	New

o. Casing design subject to revision based on geologic conditions encountered.

p. The cement program will be as follows:

17-1/2' Surface	*Type and Amount*
0 – 1200'	**Lead:** 623 sacks of premium light w/8% Bentonite, 2% CaCl, & .25 lb/sk cellophane flakes. Yield 2.23 cu. ft/sk **Tail:** 304 sacks of Class G w/2% CaCl & .25 lb/sk cellophane flakes. Yield 1.17 cu ft/sk. Topout if needed to get cement back to surface
9-5/8' Intermediate	***Stage 2 – Type and Amount (Cementing Stage Tool @ 3500')***
0' – 3050'	**Lead:** 519 sacks of premium light w/ 0.4% Fluid Loss Control, 0.3% Retarder and 5% Salt. Yield 2.24 cu ft/sk. **Tail:** 156 sacks, 0.3% Dispersant, 0.3% Defoamer, 0.3% Retarder and 0.3% Low Fluid Loss Control. Yield 1.15 cu ft/sk.
7" Production	***Stage 1 – Type and Amount***
2000' – TD	Single Slurry: 485 sacks of Class G w/0.3% fluid loss, 0.3% retarder, 0.3% dispersant. Yield 1.15 cu ft/sk.

q. The Salt Lake Field Office should be notified, with sufficient lead time, in order to have a BLM representative on location while running all casing strings and cementing.

r. After cementing bur before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe. WOC time shall be recorded in the driller's log.

s. The following reports shall be filed with the District Manager within 30 days after the work is completed.

1. Progress reports, Form 3160-5 (formerly 9-331) "Sundry Notices and Reports on Wells", must include complete information concerning:

a. Setting of each string of casing, showing the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.

t. Auxiliary equipment to be used is as follows:

1. Kelly cock
2. No bit float is deemed necessary.
3. A sub with a full opening valve.

5. **MUD PROGRAM**

a. The proposed circulating mediums to be employed in drilling are as follows:

Interval	*Mud Type*	*Mud Wt.*	*Visc.*	*F/L*
0-1200'	FW mud w/gel sweeps	8.8	40	NC
1200'-3050'	Salt Mud	8.8	45	8-10
3050'-TD'	LSND-PHPA	8.8	45	6-8

There will be sufficient mud on location to ensure proper well control.

A mud test shall be performed every 24 hours after mudding to determine, as applicable: density, viscosity, gel strength, static filtration loss, and Ph.

b. Mud monitoring equipment to be sued is as follows:

1. Periodic checks will be made each tour of the mud system. The mud level will be checked visually.

c. Hazardous substances specifically listed by the EPA as a hazardous waste or demonstrating a characteristic of a hazardous waste will not be used in drilling, testing or completion operations.

6. EVALUATION PROGRAM – TESTING, LOGGING AND CORING

The anticipated type and amount of testing, logging and coring are as follows:

a. No drill stem tests are anticipated, however, if DST's are run, the following requirements will be adhered to:

Initial opening of drill stem test tools shall be restricted to daylight hours unless specific approval to start during other hours is obtained from the authorized officer. However, DST's may be allowed to continue at night if the test was initiated during daylight hours and the rate of flow is stabilized and if adequate lighting is available (i.e. lighting which is adequate for visibility and vapor-proof for safe operations). Packers can be released, but tripping shall not begin before daylight, unless prior approval is obtained from the authorized officer. Closed chamber DSTs may be accomplished day or night.

A DST that flows to the surface with evidence of hydrocarbons shall be either reversed out of the testing string under controlled surface conditions or displaced into the formation prior to pulling the test tool. This would involve providing some means for reverse circulation.

Separation equipment required for the anticipated recovery shall be properly installed before a test starts.

All engines within 100 feet of the wellbore that are required to "run" during the test shall have spark arresters or water cooled exhausts.

b. The logging program will consist of a Resistivity, Density-Neutron, Dipole Sonic and FMI/Dipmeter to be run from base of surface casing to total depth.

c. Sidewall cores may be acquired in the Navajo formation.

7. ANTICIPATED PRESSURES AND H_2S GAS

a. The expected bottom hole pressure is 2200 psi.

b. No hydrogen sulfide gas is anticipated.

8. **OTHER INFORMATION AND NOTIFICATION REQUIREMENTS**

a. Production data shall be reported to the MMS pursuant to 30 CFR 216.5 using form MMS/3160.

b. The date on which production is commenced or resumed will be construed for oil wells as the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever first occurs; and, for gas wells as the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or the date on which gas is first measured through permanent metering facilities, whichever first occurs.

c. Pursuant to NTL-4A, lessees or operators are authorized to vent/flare gas during initial well evaluation tests, not exceeding a period of 30 days or the production of 50 MMCF of gas, whichever occurs first. An application must be filed with the District Engineer and approval received, for any venting/flaring of gas beyond the initial 30 day or authorized test period.

d. Gas produced from this well may not be vented or flared beyond an initial authorized test period of 30 days or 50 MMCF following its completion, whichever occurs first, without the prior written approval of the Authorized Officer. Should gas be vented or flared without approval beyond the authorized test period, the operator may be directed to shut-in the well until the gas can be captured or the operator shall be required to compensate the lessor for that portion of the gas vented or flared without approval which is determined to have been avoidably lost.

e. A schematic facilities diagram is required by 43 CFR 3162.7-2, 3162.7-3 and 3162.7-4 shall be submitted to the appropriate District Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in 43 CFR 3162.7 and Onshore Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 43 CFR 3162.704.

f. Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed."

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to $10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c)(3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3162.4-1(b)(5)(ii).

g. Drilling will commence on approximately October 19, 2007.

h. It is anticipated that the drilling of this well will take approximately 45 days.

i. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the AO. If operations are to be suspended, prior approval of the AO will be obtained and notification given before resumption of operations.

j. Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported in accordance with the requirements of NTL-3A or its revision.

k. If a replacement rig is contemplated for completion of operations, a "Sundry Notice" Form 3160-5 to that effect will be filed, for prior approval of the AO, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig.

l. Pursuant to Onshore Order No. 7, with the approval of the District Engineer, produced water may be temporarily disposed of into unlined pits for a period of up to 90 days. During the period so authorized, an application for approval of the permanent disposal method, along with the required water analysis and other information, must be submitted to the District Engineer.

m. No well abandonment operations will be commenced without the prior approval of the AO. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the SO. A "Subsequent Report of Abandonment" Form 3160-5, will be filed with the AO within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the AO or his representative or the appropriate Surface Managing agency.

ONSHORE OIL & GAS ORDER NO.1

Thirteen Point Surface Use Plan

The initial onsite inspection for the subject well was conducted on Monday, August 6, 2007. A second onsite inspection was conducted on Thursday, October 4, 2007 at approximately 10:00 a.m. In attendance at the onsite inspection were the following individuals:

Bob Griffin	Operations Foreman	Ansbro Petroleum Company
Keith Bonati	Sr. Landman	Ansbro Petroleum Company
Jim Oursland	Drilling Manager	Ansbro Petroleum Company
Allen Childs	Surveyor	Talon Resources, Inc.
Tom Lloyd	Geologist	Forest Service – Price, UT
Angie Gruber	Geologist	Forest Service – Ferron, UT
Dale Harbor		Forest Service – Price, UT
Kevin Albrecht	Wildlife Biologist	Forest Service – Ferron, UT
Doug Sakaguchi	Habitat Biologist	Utah Div. of Wildlife Resources

1. EXISTING ROADS

a. The proposed well site is located approximately 16 miles north of Fairview, Utah.

b. Directions to the location from Fairview, Utah are as follows:

From Fairview proceed north on Highway 89 for 13.5 miles. Turn east proceed 2 miles to Forest Service property line and location

c. For location of access roads within a 1/2-Mile radius, see the 1:100,000 map and Map L-1.

d. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well

e. Existing roads and newly constructed roads on surface under the jurisdiction of any surface Managing Agency shall be maintained in accordance with the standards of the SMA.

f. Vehicle operators will obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions.

2. PLANNED ACCESS ROADS

a. The existing access road through Section 19 and 20 is on property managed by the Utah Division of Wildlife Resources (UDWR). This portion of the road will be upgraded to a crowned and ditched road with a running surface of 20 feet (or as otherwise agreed to by the UDWR). The access road will be surfaced with gravel as agreed to by UDWR. The proposed road will follow its existing alignment – unless it is necessary to re-locate the road, the unused segments of the existing road will be reclaimed, re-contoured and reseeded as requested by the Utah Division of Wildlife. The approximate length of the existing road is 7940 feet.

b. Approximately 2990 feet of new access will be required (2940 feet on the Utah DWR lands and 50 feet on U.S. Forest Service Lands). The portion of access road located on DWR lands will be constructed to similar standards as the road to be improved on DWR lands. All access located on Forest Lands will be constructed in accordance with the approved road plans. These road plans will be submitted under separate cover – directly to the U.S. Forest Service by Talon Resources, Inc.

c. The maximum grade of the new construction will be shown on the approved road design.

d. No turnouts are anticipated, however, if they are necessary they will be shown on the approved road design.

e. Any culverts required on Forest Lands will be shown on the approved road design. Culverts needed on the DWR lands will be agreed to with DWR prior to installation.

f. The access road was center line surveyed at the time of staking. See Map L-1.

g. Surfacing material will be necessary along the road route and will be shown on the road design.

h. The gate at the entrance to the access road will remain locked when directed by the DWR. Only Ansbro company personnel and representatives of the USFS and DWR will have the combination to the lock.

i. If requested by the DWR, signs will be placed at the gate – prohibiting unauthorized traffic.

j. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance. Unauthorized off-road vehicular travel is prohibited.

3. LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS OF THE PROPOSED LOCATION

a. Water wells – none

b. Injection wells – none

c. Producing wells – none

d. Drilling wells – none

4. LOCATION OF TANK BATTERIES AND PRODUCTION FACITILITES

a. If the well is productive, a schematic facility design will be submitted to the BLM and Forest Service for approval of any production facilities.

b. Any approved permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted a neutral color to blend with the surrounding environment. The proposed color for this site is Shale Green unless otherwise stipulated by the Forest Service. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded.

5. LOCATION AND TYPE OF WATER SUPPLY

a. All water needed for drilling purposes will be obtained from a water well to be drilled on the well pad. All appropriate permits will be obtained from the Utah Division of Water Resources prior to drilling this well.

b. A copy of the approved water permit will be submitted under a separate cover.

c. Water needed for operations will be properly and legally obtained according to State water laws.

d. Once the water well is no longer deemed necessary for drilling and completion operations it will be plugged and abandoned – unless otherwise negotiated with the Forest Service.

6. SOURCE OF CONSTRUCTION MATERIAL

a. Surface and subsoil materials in the immediate area of the well pad and access road will be utilized.

b. Any gravel used will be obtained from a private or commercial source. The proposed source of gravel is located on private lands access from Hwy 89

c. Any use of materials under BLM jurisdiction will conform with 43 CFR 3610.2.3 Construction material will not be located on lease.

d. No construction materials will be removed from Federal land, unless agreed to by the Forest Service.

7. METHODS OF HANDLING WASTE DISPOSAL

a. The reserve pit will be constructed so as not to leak, break, or allow discharge. The reserve pit will be lined with a minimum of 10 mil plastic liner.

b. The reserve pit will be constructed of sufficient size and capacity for the necessary fluids for drilling and to contain any runoff from the drill site. Pits will not be constructed within intermittent or perennial stream channels.

c. No trash, scrap pipe, etc., that could puncture the liner will be disposed of in the pit.

d. The reserve pit will be constructed in the undisturbed material and below the natural ground level.

e. All drilling fluids will be contained in the reserve pit. All appropriate measures will be taken to assure that leakage through the reserve pit does not occur and that fluids are not allowed to overflow. A minimum 2-foot freeboard will be maintained in the pit at all times during the drilling operation and the pit will be fenced during drilling and completion operations.

f. Burning of garbage and debris is prohibited. All trash will be contained in a trash cage and its contents periodically disposed of (off the Forest) at an approved refuse facility.

g. Drill cuttings are to be contained and buried in the reserve pit.

h. Any salts and/or chemicals which are an integral part of the drilling system will be disposed of in the same manner as the drilling fluid.

i. Sanitary facilities are required on site at all times during operations. Sewage will be placed in a portable chemical toilet or holding tank and disposed of in accordance with state and county

regulations. The installation of facilities, other than self contained chemical toilets, is subject to State and Forest Service approval.

j. The produced fluids (other than water) will be produced into a test tank until such time as construction of production facilities is completed. Any Spills of oil, gas salt water or other produced fluids will be cleaned up and removed.

8. ANCILLARY FACILITIES

There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. WELL SITE LAYOUT

a. Section corners, survey markers and claim corners in the project area will be located and flagged by Ansbro Petroleum Company prior to operations. The removal or disturbance of identified markers will be approved by the proper authority.

b. The pad and road designs will be consistent with Forest Service specifications and are subject to Forest Service approval. No construction operations may begin prior to approval. Any modifications to approved plans are also subject to review and approval.

c. A pre-construction meeting including the responsible company representative(s), contractors, and the Forest Service must be conducted at the project site prior to commencement of surface-disturbing activities. The pad and road work (on Forest Lands) must be construction-staked prior to this meeting.

d. All necessary right of way permits will be obtained from the Utah Division of Wildlife for access across Section 19 and 20, T11S – R4E, Utah County, Utah.

e. The project engineer and surveyors are certified by the State in which they reside or maintain their business.

f. All surface disturbing activities, including reclamation, will be supervised by a qualified, responsible official or representative of Ansbro Petroleum Company who is aware of the terms and conditions of the APD and specifications in the approved plans.

g. All cut and fill slopes will be such that stability can be maintained for the life of the activity. Cut and fill slopes will be constructed as follows: Enter Table

h. All fills will be free from vegetative materials.

i. If the well is productive, the working surface of the drill site will be surfaced with crushed gravel to a depth sufficient to support anticipated loads throughout the life of the well. Usually a depth of 6 inches of gravel is anticipated.

j. The ditch will be located at the base of the cut slope and around the toe of the fill slopes. A straw dike will be constructed in the ditch outflow to trap any sediment produced from the raw slopes.

k. A berm will be constructed around the perimeter of the site to contain all precipitation, spills, and other fluids from leaving the site. The berm will be a minimum of 18 inches high, 12 inches wide at the top, and having 1- ½:1 side slopes. The site surface will be graded to drain to the reserve pit. The drainage pattern to be constructed will be modified for each site, depending on the site specific conditions.

l. Silt fencing will be installed at the base of the fill slope. In addition, a silt fence will be constructed surrounding the entire topsoil stock pile.

m. The reserve pit will be located on the east side of the location.

n. The stockpiled topsoil (first 6 inches or maximum available) will be stored along the northern edge of the location. All topsoil must be stripped from areas to be disturbed and stockpiled for reclamation in such a way as to prevent soil loss and contamination.

o. Cross sections of drill pad are shown on Drawing C-1. Cuts and fills are shown on Drawing A-2.

p. The location of the reserve pit is shown on Drawing A-2.

q. All pits will be fenced and flagged to prevent wildlife entry.

r. The reserve pit fencing (5 strand barbed wire) will be on three sides during drilling operations and on the fourth side when the rig moves off the location. Pits will be fenced and maintained until cleanup.

10. PLANS FOR RESTROATION OF SURFACE

Dry Hole

a. Rehabilitation of the entire site will be required and will commence as soon as possible after the drilling is complete. The site will be restored as nearly practical to its original condition. Cut and fill slopes will be reduced and graded to conform to the adjacent terrain.

b. Drainages will be reestablished and temporary measures will be required to prevent erosion to the site until vegetation is established.

c. Generally speaking, the standpipe for well identifications will be removed on National Forest lands. A final determination will be made on a case-by-case basis.

d. After final grading and before the replacement of topsoil, the entire surface of the site shall be scarified to eliminate slippage surfaces and to promote root penetration. Topsoil will then be spread over the site to achieve an approximate uniform stable thickness consistent with the established contours.

e. A temporary fence (let down fence) will be constructed around the site to prevent continued use until the required reclamation standards are successfully achieved. The fence will then be removed.

f. In general, the disturbed areas will be considered adequately re-vegetated when at least 90 percent of the original ground over is re-established over 90 percent of the seeded area, within three years of planting, consisting of seeded and desirable species. Maximum allowable non-noxious weeds is 10 percent of the total ground cover at any time. No noxious weeds will be allowed on the site; the must be treated as they occur. The operator is responsible for maintenance of reclamation facilities such as fences, barricades and temporary drainage structures until the desired reclaimed conditions are achieved. If the desired ground cover is not established at the end of each 3 year period, an analysis of why the areas has not recovered will be performed by the operator and additional treatment and seeding will be required based on the results of the analysis.

g. Straw, hay, feed, or pellets used on the National Forests of Utah must be certified weed-free by the State of Utah.

h. At such time as the well is plugged and abandoned, the operator shall submit a subsequent report of abandonment.

Producing Location

i. Site reclamation for producing wells will be accomplished for portions of the site which are not required for the continued operation of the well. All disturbed surface will be treated to prevent erosion and to complement the esthetics of the area. A new site plan will be required encompassing the facilities required for operation and interim reclamation measures.

j. Immediately upon well completion, the location and surrounding are will be cleared of all unused tubing, equipment, debris, materials, trash and junk not required for production.

k. Immediately upon well completion, any hydrocarbons on the pit shall be removed in accordance with 43 CFR 3162.7-1.

l. The plastic/nylon reinforced liner shall be torn and perforated before backfilling of the reserve pit.

m. At the end of drilling operations, drilling fluids will be hauled to an approved disposal site. All polluting substances or contaminated materials, such as oil, oil-saturated soils, and gravel, will be buried with a minimum of 2 feet of clean soil as cover or be removed from the Forest.

n. The reserve pit must be dry before it is backfilled and reclaimed. Once the reserve pit is dry, the reserve pit and that portion of the location not needed for production facilities/operations will be re-contoured to the approximate natural contours. Methods for drying the pit, other than natural evaporation, are subject to prior Forest Service approval.

o. The cut and fill slopes and all other disturbed areas not needed for the production operation will be topsoiled and re-vegetated. The berm will be removed and the site graded to drain.

p. Stockpiled topsoil will be redistributed evenly over the disturbed area upon reclamation.

q. The site will be seeded and/or planted as prescribed by the Forest Service. Nutrients and soil amendments will be applied to the redistributed surface soil later as necessary to meet the re-vegetation requirements. A seed mix will be attached to the Conditions of Approval by the Forest Service.

11. SURFACE OWNERSHIP

Access Roads - Section 19: N1/2 and Section 20: N1/2, T11S-R4E:
Utah Division of Wildlife Resources
1115 N. Main
Springville, UT 84663
801-491-5678

Section 16: SW, T4S-R4E: U.S. Forest Service
599 West Price River Drive
Price, UT 84501
435-637-2817

The remainder of access roads are maintained by the County Road Department of State Highway Departments.

Well Pad - The Well pad is located on lands managed by the U.S. Forest Service.

12. OTHER INFORMATION

a. A Class III archeological survey will be conducted by Montgomery Archeological Consultants and provided under separate cover.

b. The operator is responsible for informing all persons in the areas who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials will appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the site can be used (assuming the situ preservation is not necessary); and
- A time frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that required mitigation has been completed, the operator will then be allowed to resume construction.

c. All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved plan of operations, and any applicable Notice to Lessees. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to insure compliance.

d. A complete copy of the approved APD shall be on location during construction of the location and drilling activities.

e. There will be no deviation from the proposed drilling and/or workover program without prior approval from the AO. Safe drilling and operating practices must be observed. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFE 3162.h.

f. "Sundry Notice and Report on Wells" (From 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFE 3162.3-2.

g. This permit will be valid for a period of one year from the date of approval. An extension period may be granted, if requested, prior to the expiration of the original approval period.

h. The operator or his contractor shall contact the U.S. Forest Service at 435-637-2817 48 hours prior to construction activities.

i. Fire suppression equipment must be available to all personnel on the project site. Equipment will include a minimum of one hand tool per crew member consisting of shovels, pulaskis, and chainsaws and one properly rated fire extinguisher per vehicle and/or internal combustion engine.

j. Ansbro Petroleum Company will be held responsible for damage and suppression costs for fires started as a result of operations. Fires must be reported to the Forest Service as soon as possible.

k. All accidents or mishaps resulting in resource damage and/or serious personal injury must be reported to the Forest Service as soon as possible.

l. Harassment of wildlife and livestock is prohibited.

13. Lessee's or Operators Representative and Certification

Permit Matters
Ansbro Petroleum Company
555 17th Street, Suite 2502
Denver, CO 80202
Keith V. Bonati – Sr. Landman
(303) 299-1339 (work)

EMERGENCY PHONE LINE – (888) 696-1300

Drilling & Completion Matters
Ansbro Petroleum Company
555 17th Street, Suite 2502
Denver, CO 80202
Jim Oursland – Drilling Manager
(303) 299-1228 (work)
(303) 887-1427 (cell

Bob Griffin – Operations Foreman
(254) 381-9020 (cell)

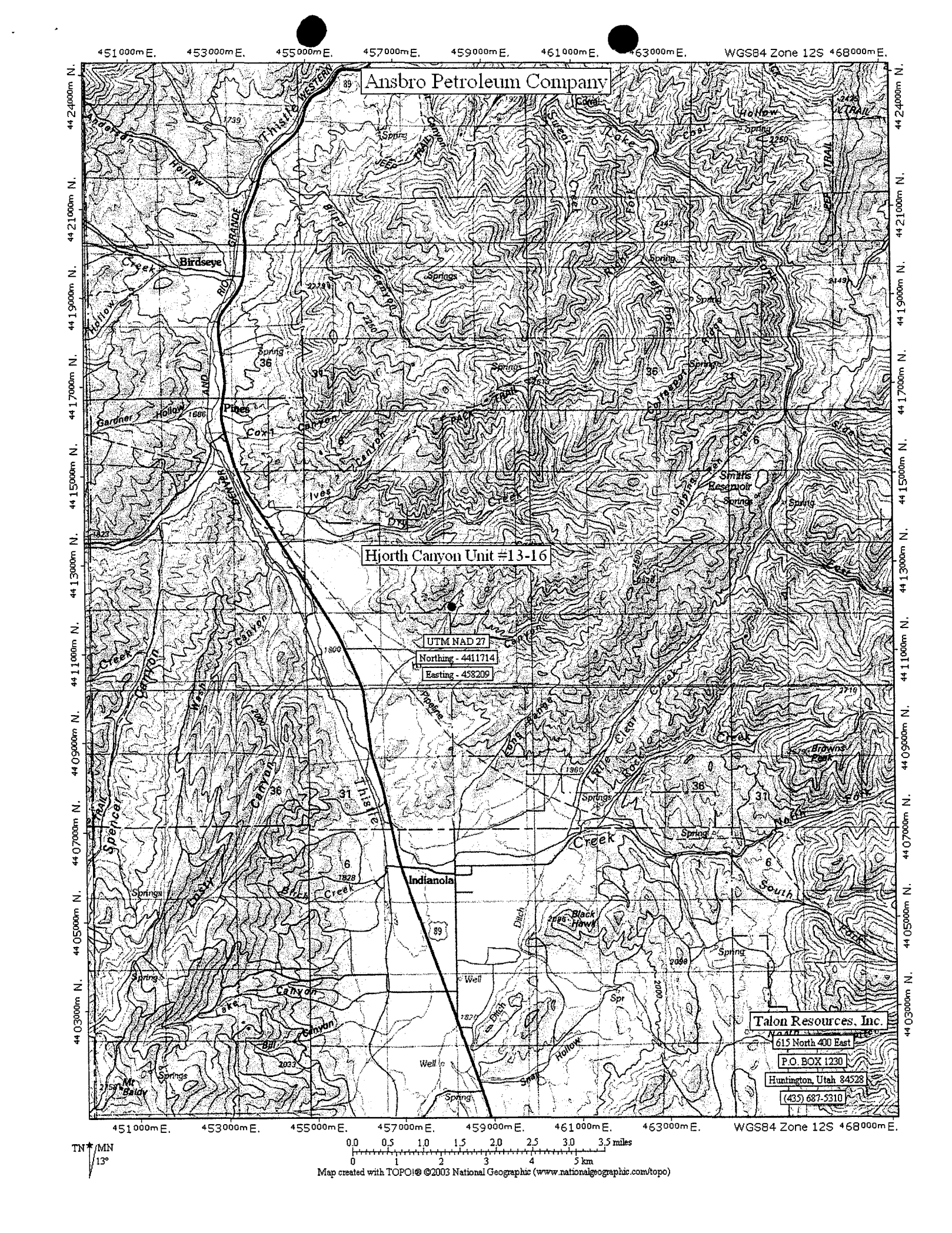
CERTIFICATION

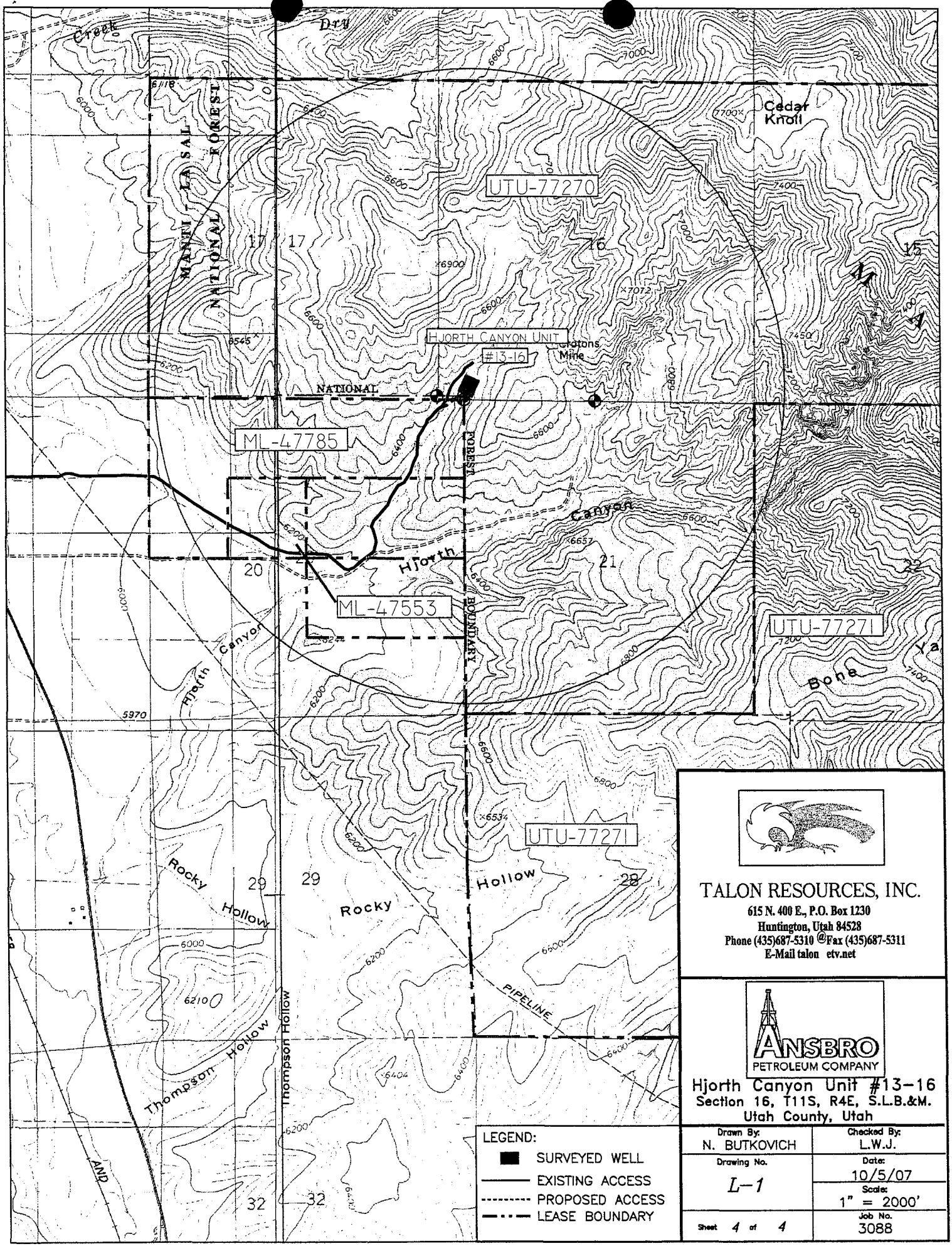
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Ansbro Petroleum Company and its contractors and subcontractors in conformity with the plan and the terms and conditions under which it is approved.

This statement is subject to the provisions of the 18.U.S.C. 1001 for the filing of a false statement.

October 9, 2007
Date:

Keith V. Bonati
Sr. Landman
Ansbro Petroleum Company


Ansbro Petroleum Company
Hjorth Canyon Unit #13-16
UTM NAD 27
Northing - 4411714
Easting - 458209
Talon Resources, Inc.
615 North 400 East
P.O. BOX 1230
Huntington, Utah 84528
(435) 687-5310
Indianola
Birdseye
Pines
Thistle
WESTERN
RIO GRANDE
451000m E.
453000m E.
455000m E.
457000m E.
459000m E.
461000m E.
463000m E.
468000m E.
WGS84 Zone 12S
TN 13° MN
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 miles
0 1 2 3 4 5 km
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)



TALON RESOURCES, INC.
615 N. 400 E., P.O. Box 1230
Huntington, Utah 84528
Phone (435)687-5310 @Fax (435)687-5311
E-Mail talon etv.net

ANSBRO PETROLEUM COMPANY

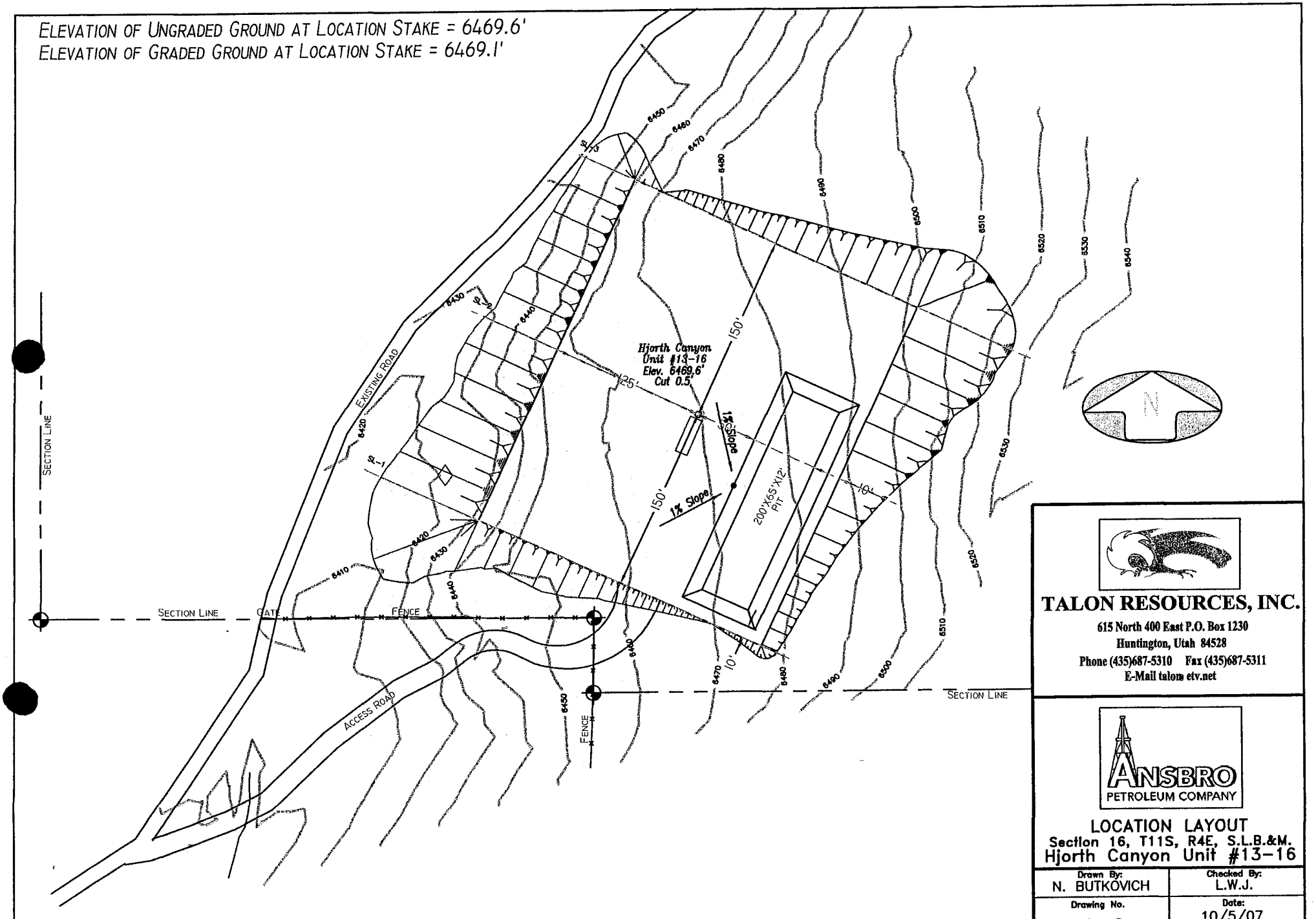
Hjorth Canyon Unit #13-16

Section 16, T11S, R4E, S.L.B.&M.
Utah County, Utah

LEGEND:
- SURVEYED WELL
- EXISTING ACCESS
- PROPOSED ACCESS
- LEASE BOUNDARY

Drawn By: N. BUTKOVICH	Checked By: L.W.J.
Drawing No. L-1	Date: 10/5/07
	Scale: 1" = 2000'
Sheet 4 of 4	Job No. 3088

ELEVATION OF UNGRADED GROUND AT LOCATION STAKE = 6469.6'
ELEVATION OF GRADED GROUND AT LOCATION STAKE = 6469.1'



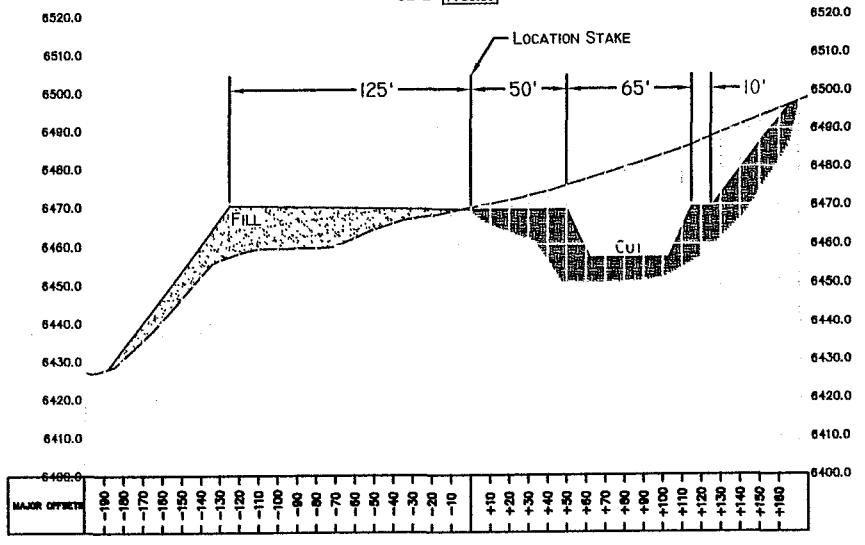
TALON RESOURCES, INC.
615 North 400 East P.O. Box 1230
Huntington, Utah 84528
Phone (435)687-5310 Fax (435)687-5311
E-Mail talon etv.net

ANSBRO PETROLEUM COMPANY

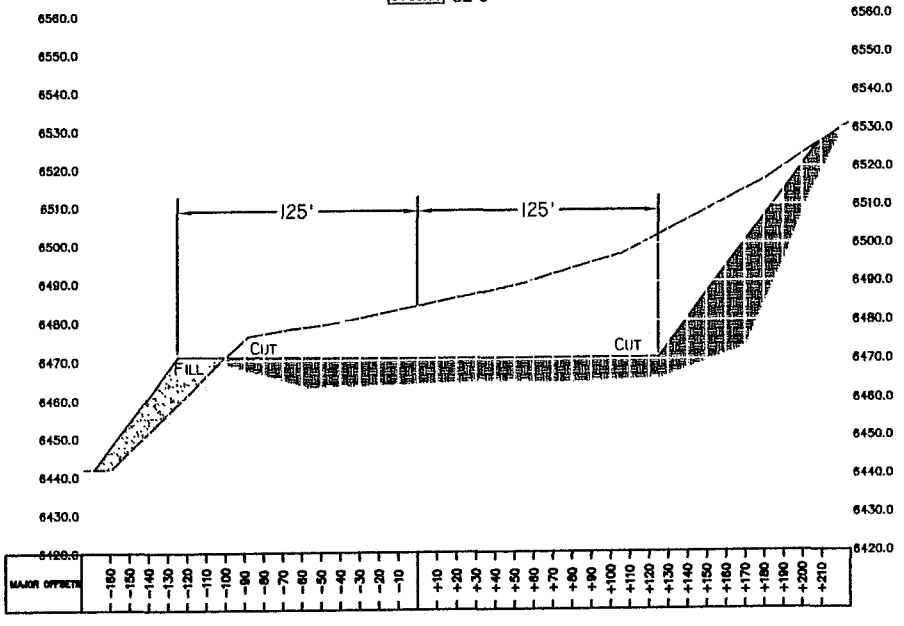
LOCATION LAYOUT
Section 16, T11S, R4E, S.L.B.&M.
Hjorth Canyon Unit #13-16

Drawn By: N. BUTKOVICH	Checked By: L.W.J.
Drawing No. A-2	Date: 10/5/07
	Scale: 1" = 100'
Sheet 2 of 4	Job No. 3088

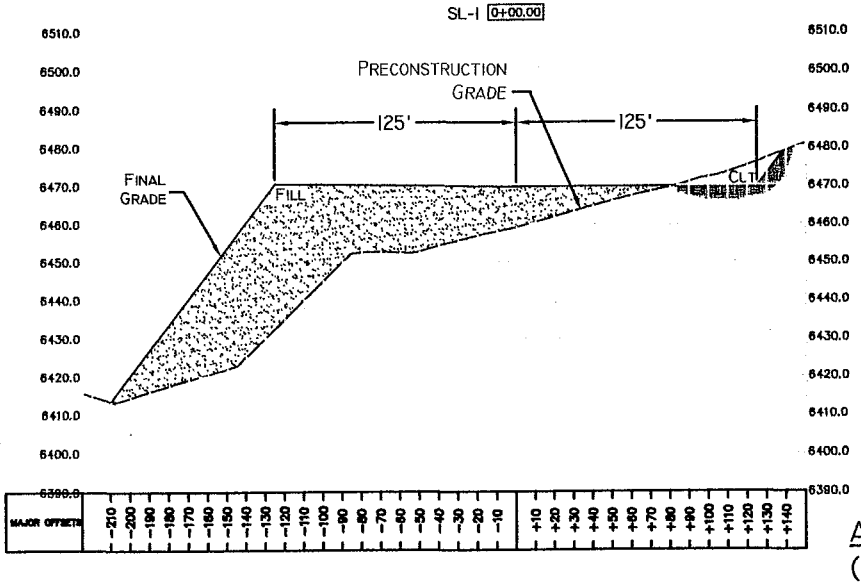
SL-2 1+50.00



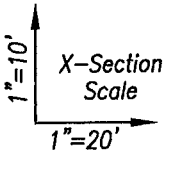
3+00.00 SL-3



SL-1 0+00.00



CUT SLOPE = 1 : 1
FILL SLOPE = 1 1/2 : 1
PIT SLOPE = 1 : 1



APPROXIMATE YARDAGES

(6")TOPSOIL STRIPPING = 1,390 CU. YDS.
TOTAL CUT (INCLUDING PIT) = 27,395 CU. YDS.
TOTAL FILL = 24,705 CU. YDS.

TALON RESOURCES, INC.
615 North 400 East P.O. Box 1230
Huntington, Utah 84528
Phone (435)687-5310 Fax (435)687-5311
E-Mail talon@etv.net

ANSBRO PETROLEUM COMPANY

TYPICAL CROSS SECTION

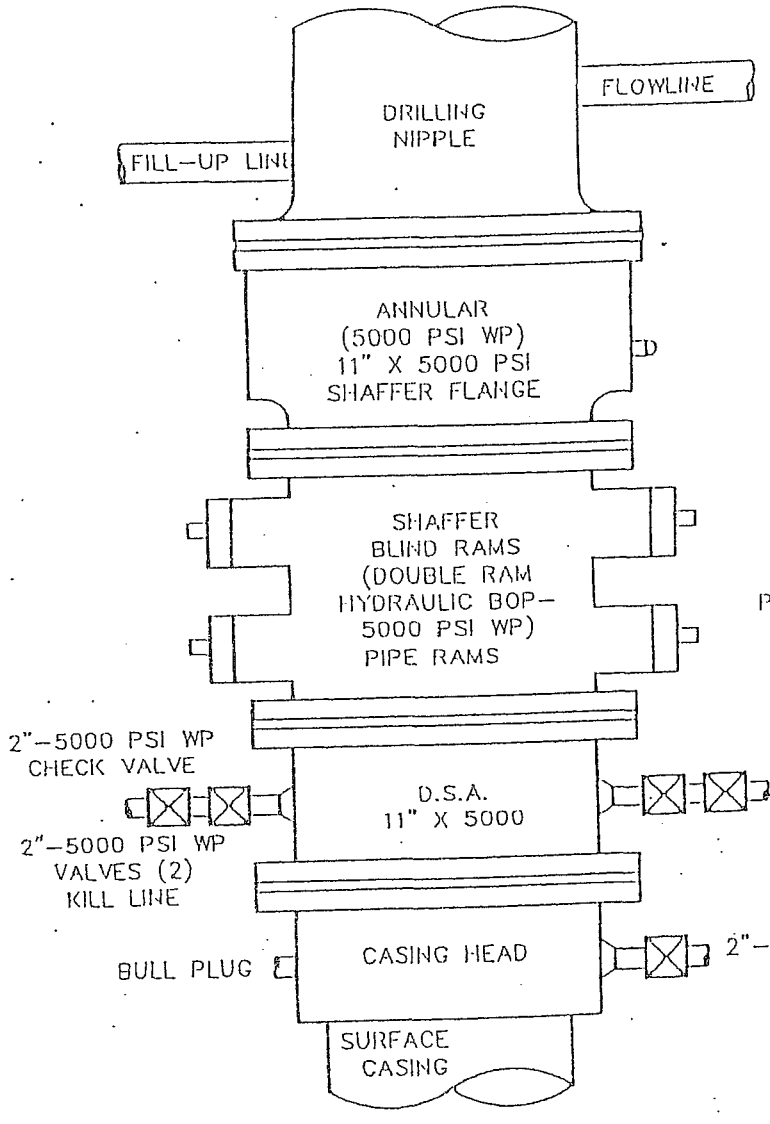
Section 16, T11S, R4E, S.L.B.&M.
Hjorth Canyon Unit #13-16

Drawn By: N. BUTKOVICH	Checked By: L.W.J.
Drawing No. C-1	Date: 10/5/07
	Scale: 1" = 100'
Sheet 3 of 4	Job No. 3088

FEDERAL STIPULATIONS

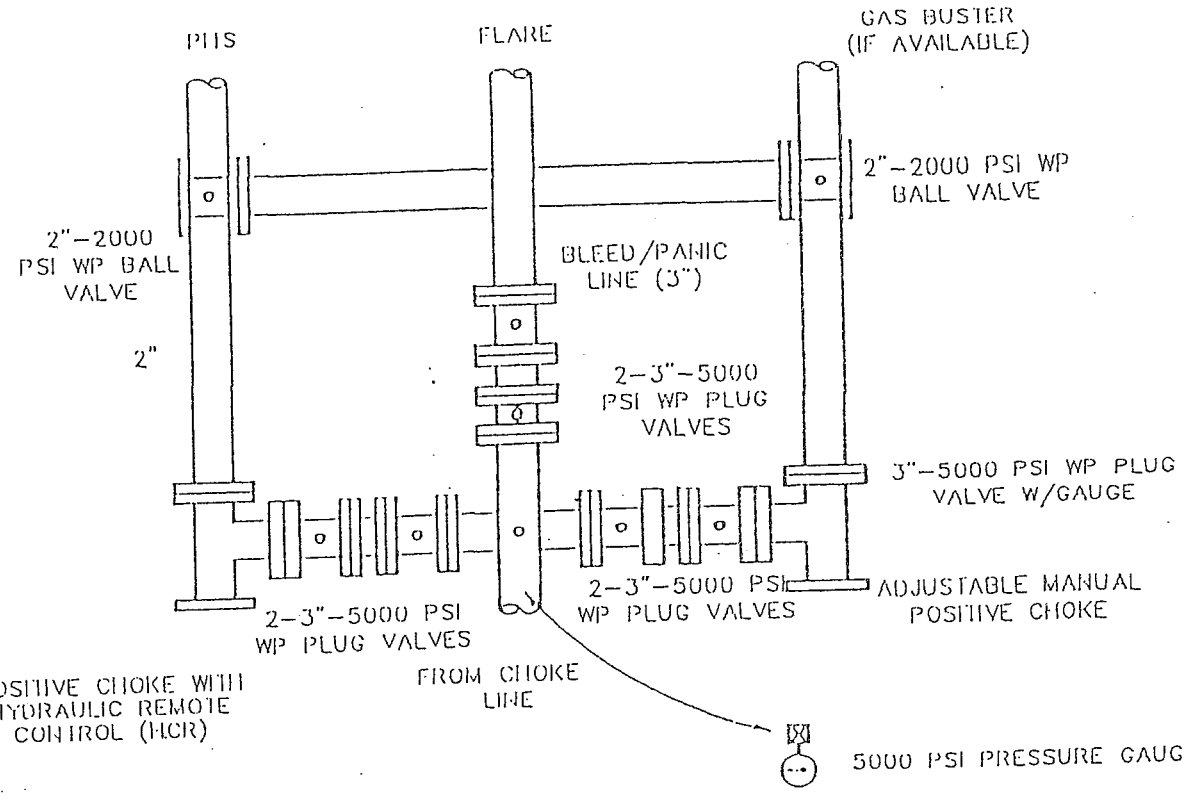
Any timing limitation stipulations which apply to this lease will be attached by the Forest Service as a Condition of Approval.

BOP SCHEMATIC
5000 PSI WORKING PRESSURE



3"-5000 PSI WP VALVE (HCR)
3"-5000 PSI WP VALVE
3"-5000 PSI AUTOMATIC CHOKE
CHOKE LINE (I.D.)

PLAN VIEW CHOKE MANIFOLD



THE HYDRAULIC CLOSING UNIT WILL BE LOCATED MORE THAN 30' FROM THE WELLHEAD. CHOKE AND BLEED/PANIC LINES WILL GO TO THE PIT AND FLARE. ALL CONNECTIONS IN CHOKE LINES AND MANIFOLD WILL BE FLANGED OR WELDED. ALL FLANGES SHOULD BE RING JOINT GASKET TYPE. ALL TURNS IN LINES SHALL BE CONSTRUCTED USING TARGETING 90° TEES OR ELLS. ALL LINES SHALL BE ANCHORED.

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 10/10/2007

API NO. ASSIGNED: 43-049-30021

WELL NAME: HJORTH CYN U 13-16

OPERATOR: ANSBRO PETROLEUM CO, (N2730)

PHONE NUMBER: 303-299-1400

CONTACT: KEITH BONATI

PROPOSED LOCATION:

SWSW 16 110S 040E

SURFACE: 0225 FSL 0527 FWL

BOTTOM: 0225 FSL 0527 FWL

COUNTY: UTAH

LATITUDE: 39.85648 LONGITUDE: -111.4871

UTM SURF EASTINGS: 458335 NORTHINGS: 4411732

FIELD NAME: WILDCAT (1)

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU-77270

PROPOSED FORMATION: JRSC

SURFACE OWNER: 1 - Federal

COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

✓ Plat

✓ Bond: Fed[1] Ind[] Sta[] Fee[]
(No. CO-1040)

N Potash (Y/N)

N Oil Shale 190-5 (B) or 190-3 or 190-13

✓ Water Permit
(No. Municipal)

N/A RDCC Review (Y/N)
(Date:)

N/A Fee Surf Agreement (Y/N)

N/A Intent to Commingle (Y/N)

LOCATION AND SITING:

___ R649-2-3.

Unit: HJORTH CYN

___ R649-3-2. General

Siting: 460 From Qtr/Qtr & 920' Between Wells

✓ R649-3-3. Exception

___ Drilling Unit

Board Cause No:

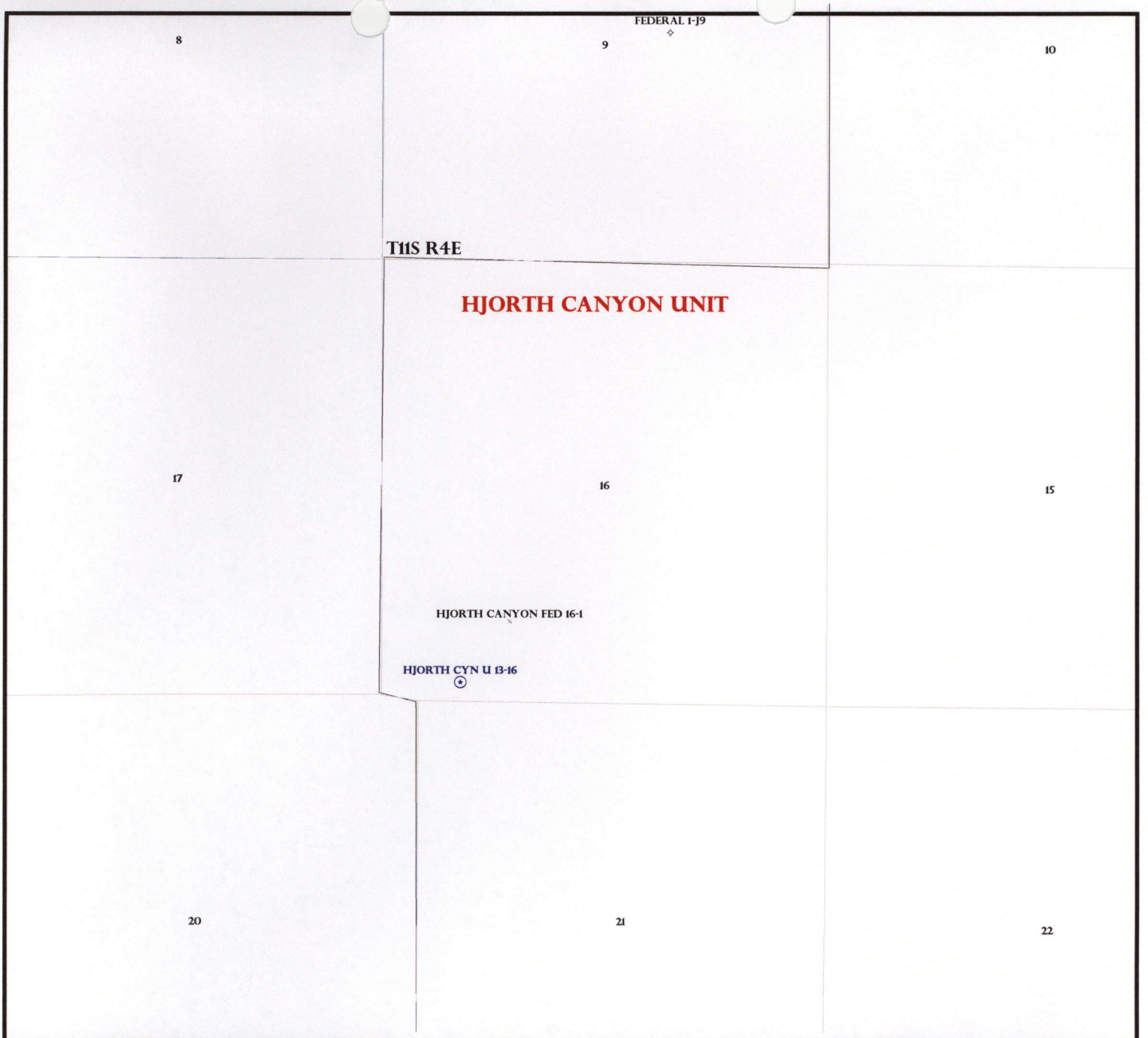
Eff Date:

Siting:

___ R649-3-11. Directional Drill

COMMENTS:

STIPULATIONS: 1- Federal Approval
2- Spacing Slip



OPERATOR: ANSBRO PETRO CO (N2730)

SEC: 16 T.11S R. 4E

FIELD: WILDCAT (001)

COUNTY: UTAH

SPACING: R649-3-3 / EXCEPTION LOCATION

Field Status
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

Unit Status
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Wells Status
- GAS INJECTION
- GAS STORAGE
- LOCATION ABANDONED
- NEW LOCATION
- PLUGGED & ABANDONED
- PRODUCING GAS
- PRODUCING OIL
- SHUT-IN GAS
- SHUT-IN OIL
- TEMP. ABANDONED
- TEST WELL
- WATER INJECTION
- WATER SUPPLY
- WATER DISPOSAL
- DRILLING

UTAH DNR
OIL, GAS & MINING

N
W E
S

PREPARED BY: DIANA MASON
DATE: 06-MARCH-2008

WORKSHEET

APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 10/10/2007

API NO. ASSIGNED: 43-049-30021

WELL NAME: HJORTH CYN U 13-16

OPERATOR: ANSCHUTZ EXPLORATION (N7940)

PHONE NUMBER: 303-299-1400

CONTACT: KEITH BONATI

PROPOSED LOCATION:

SWSW 16 110S 040E

SURFACE: 0225 FSL 0527 FWL

BOTTOM: 1419 FSL 1791 FEL

COUNTY: UTAH

LATITUDE: 39.85648 LONGITUDE: -111.4871

UTM SURF EASTINGS: 458335 NORTHINGS: 4411732

FIELD NAME: WILDCAT (1)

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU-77270

PROPOSED FORMATION: JRSC

SURFACE OWNER: 1 - Federal

COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

_____ Plat

_____ Bond: Fed[1] Ind[] Sta[] Fee[]
(No. COB000111)

_____ Potash (Y/N)

_____ Oil Shale 190-5 (B) or 190-3 or 190-13

_____ Water Permit
(No. _____)

_____ RDCC Review (Y/N)
(Date: _____)

_____ Fee Surf Agreement (Y/N)

_____ Intent to Commingle (Y/N)

LOCATION AND SITING:

____ R649-2-3.

Unit: HJORTH CYN

____ R649-3-2. General

Siting: 460 From Qtr/Qtr & 920' Between Wells

____ R649-3-3. Exception

____ Drilling Unit

Board Cause No: _____

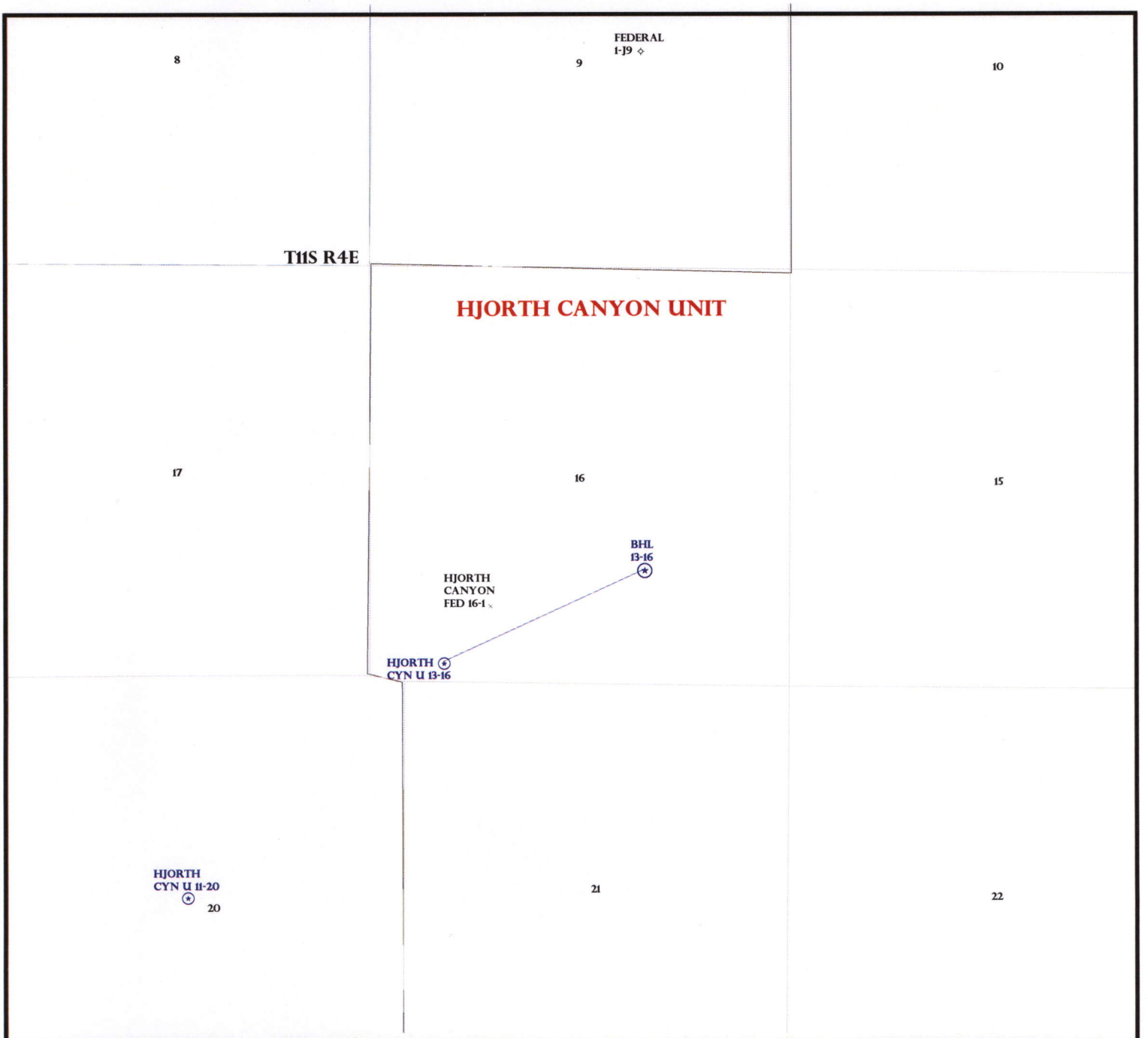
Eff Date: _____

Siting: _____

____ R649-3-11. Directional Drill

COMMENTS: _____

STIPULATIONS: _____



OPERATOR: ANSCHUTZ EXPL & PROD (N7940)

SEC: 16 T.11S R. 4E

FIELD: WILDCAT (001)

COUNTY: UTAH

SPACING: R649-3-11 / DIRECTIONAL DRILLING

Field Status
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

Unit Status
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Wells Status
- GAS INJECTION
- GAS STORAGE
- LOCATION ABANDONED
- NEW LOCATION
- PLUGGED & ABANDONED
- PRODUCING GAS
- PRODUCING OIL
- SHUT-IN GAS
- SHUT-IN OIL
- TEMP. ABANDONED
- TEST WELL
- WATER INJECTION
- WATER SUPPLY
- WATER DISPOSAL
- DRILLING

UTAH DNR
OIL, GAS & MINING

N
W E
S

PREPARED BY: DIANA MASON
DATE: 19-JUNE-2008

ANSCHUTZ
Exploration Corporation
555 Seventeenth Street • Suite 2400 • Denver, Colorado 80202 • Telephone 303/298-1000 • Fax 303/299-1518

March 4, 2008

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84116
Attn: Diana Mason

Sent via Federal Express

Re: Hjorth Canyon 13-16 Well
SWSW of Sec. 16, T11S, R4E
Utah County, Utah
API No. 43-049-30021

Dear Ms. Mason:

Please accept this letter as our request for an exception to spacing on the above-referenced location.

The Hjorth Canyon 13-16 well has been staked at non-standard footages in accordance with the rules and regulations of the Division of Oil, Gas & Mining due to topography, seismic and geologic interpretation. Please be advised that Ansbro is the Unit Operator of the Hjorth Canyon Unit, and all of acreage within a 460 foot radius of the subject location is committed to the Hjorth Canyon Unit Agreement. Therefore, we request administrative approval for this exception location.

Also be advised that Anschutz Exploration Corporation is the successor of interest by merger to Ansbro Petroleum Company, LLC. Please let me know if you require any further documentation concerning the merger of Ansbro Petroleum Company, LLC into Anschutz Exploration Corporation.

Sincerely,

Keith Bonati
Sr. Landman

KVB/gp

From: Diana Mason
To: Michael_Coulthard@blm.gov
Subject: Re: New APD for Ansbro Petro Co. - Hjorth Canyon Unit

>>> <Michael_Coulthard@blm.gov> 3/6/2008 3:42 PM >>>
Diana,

This is the initial obligation well for the Unit.
If you need a copy of the final approval letter
let me know.

In the past we haven't done memo's for
the obligation wells but that may be
because you already had the permit.

The federal permit has been on file
for some time, and we recognized an
unavoidable delay on October 22, 2007.

Thank you,

Mickey

Michael L. Coulthard
Petroleum Engineer
Bureau of Land Management
Phone (801) 539-4042
Fax (801) 539-4261

"Diana Mason"<dianawhitney@utah.gov>
To <Michael_Coulthard@blm.gov>03/06/2008 11:08
cc AM Subject New APD for Ansbro Petro Co. - Hjorth Canyon Unit

Hi Mick,

(Proposed PZ Jurassic Nugget)

43-049-30021 Hjorth Cyn Unit 13-16 Sec. 16 T. 11S R. 4E 225 FSL 527
FWL

Thank you,
Diana

ANSCHUTZ
Exploration Corporation
555 Seventeenth Street • Suite 2400 • Denver, Colorado 80202 • Telephone 303/298-1000 • Fax 303/299-1518

April 7, 2008

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84116
Attn: Diana Mason

Sent via Federal Express

Re: Hjorth Canyon 13-16 Well
SWSW of Sec. 16, T11S, R4E
Utah County, Utah
API No. 43-049-30021

Dear Ms. Mason:

Further to our recent telephone conversations regarding the subject well, please be advised that Anschutz Exploration Corporation is planning on purchasing water for the drilling of the well from Indianola Irrigation Company, Inc. The water source is from their system including a storage pond near Indianola.

If you need any further information concerning our intended water use and source for this well, please do not hesitate to give me a call.

Sincerely,

Keith Bonati
Sr. Landman

KVB/gp

RECEIVED
APR 0 8 2008
DIV. OF OIL, GAS & MINING

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

April 9, 2008

Ansbro Petroleum Company
555 17th St., Ste. 2500
Denver, CO 80202

Re: Hjorth Canyon Unit 13-16 Well, 225' FSL, 527' FWL, SW SW, Sec. 16, T. 11 South, R. 4 East, Utah County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-049-30021.

Sincerely,

Gil Hunt
Associate Director

pab
Enclosures

cc: Utah County Assessor
Bureau of Land Management, Utah State Office

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • www.ogm.utah.gov

UTAH DNR OIL, GAS & MINING

Operator: Ansbro Petroleum Company

Well Name & Number Hjorth Canyon Unit 13-16

API Number: 43-049-30021

Lease: UTU-77270

Location: SW SW **Sec.** 16 **T.** 11 South **R.** 4 East

Conditions of Approval

1. General

   Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

2. Notification Requirements

   Notify the division within 24 hours of spudding the well.

   - Contact Carol Daniels at (801) 538-5284.

   Notify the Division prior to commencing operations to plug and abandon the well.

   - Contact Dustin Doucet at (801) 538-5281 (801) 733-0983 home

3. Reporting Requirements

   All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.

5. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-77270

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: n/a

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon Unit 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th St., Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 225' FSL 527' FWL

COUNTY: Utah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/20/2008	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☑ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Anschutz Exploration Corporation requests permission to use a 3000 psi BOP stack and choke manifold in drilling the Hjorth Canyon 13-16 well. Given the anticipated BHP (2200 psi) and substructure size limitations, a 3000 psi BOP stack will best satisfy well control requirements. (A 3000 psi BOP diagram is attached.)

COPY SENT TO OPERATOR
Date: 6·26·2008
Initials: KS

NAME (PLEASE PRINT) Marguerite K. Timbel TITLE Senior Vice President

SIGNATURE Marguerite K Timbel DATE 6/13/2008

(This space for State use only)

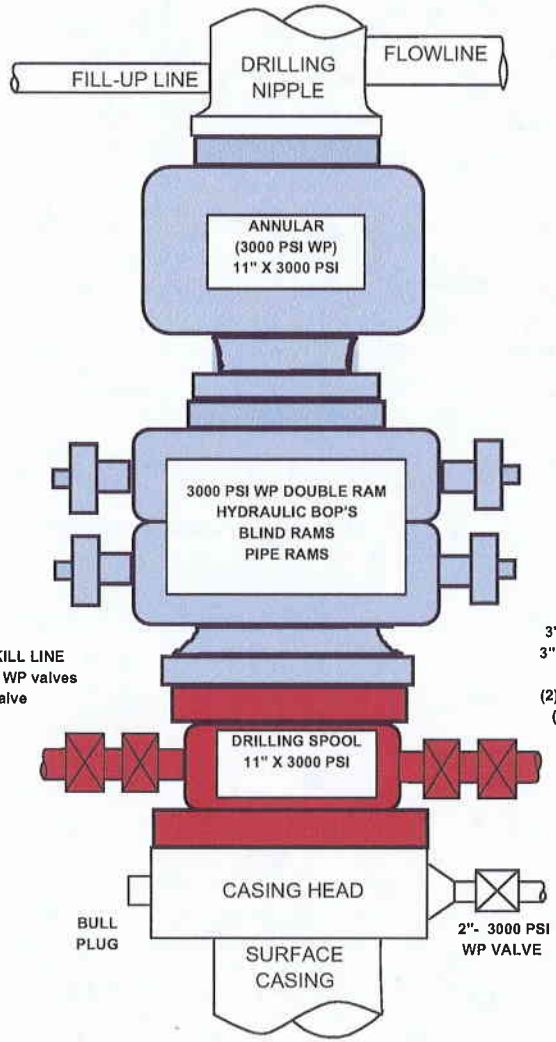
Accepted by the Utah Division of Oil, Gas and Mining
Date: 6/25/08
By:

Federal Approval Of This Action Is Necessary

RECEIVED
JUN 16 2008
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

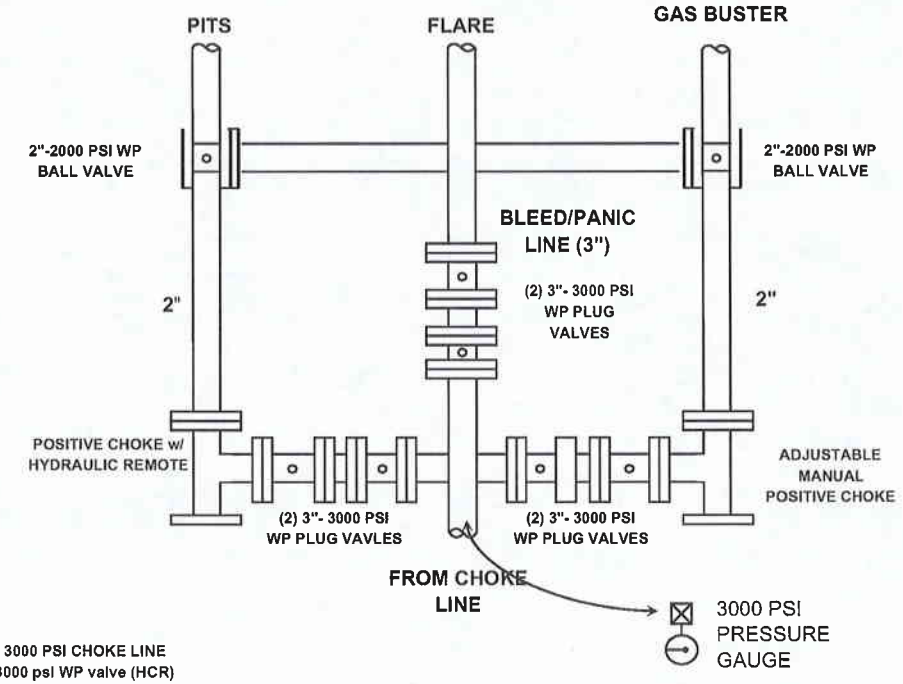
BOP SCHEMATIC
3000 PSI WORKING PRESSURE



2" -3000 PSI KILL LINE
(2) 2" - 3000 psi WP valves
Check Valve

3" - 3000 PSI CHOKE LINE
3" -3000 psi WP valve (HCR)
3" - 3000 psi WP valve
(2) 3" - 3000 psi WP chokes
(1) choke controlled remotely from rig floor

PLAN VIEW CHOKE MANIFOLD



THE HYDRAULIC CLOSING UNIT WILL BE LOCATED MORE THAN 30' FROM THE WELLHEAD. CHOKE AND BLEED/PANIC LINES WILL GO TO THE PIT AND FLARE. ALL CONNECTIONS IN CHOKE LINES AND MANIFOLD WILL BE FLANGED OR WELDED. ALL FLANGES SHOULD BE RING JOINT GASKET TYPE. ALL TURNS IN LINES SHALL BE CONSTRUCTED USING TARGETING 90° TEES OR ELLS. ALL LINES SHALL BE ANCHORED.

ANSCHUTZ
EXPLORATION CORPORATION
555 Seventeenth Street • Suite 2400 • Denver, Colorado 80202 • Telephone 303/298-1000 • Fax 303/299-1518

COPY

June 11, 2008

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

RE: Hjorth Canyon 13-16 well

Dear Sir or Madam:

Enclosed please find a sundry proposing Anschutz Exploration Corporation's intention, as the unit operator, to drill the Hjorth Canyon 13-16 well directionally. In accordance with rule R649-3-11, all of the acreage within a radius of 460' of the bottom hole is committed to the Hjorth Canyon Unit.

Please contact me if you have any questions.

Sincerely,

Keith Bonati
Senior Landman
Anschutz Exploration Corporation

ANSCHUTZ
EXPLORATION CORPORATION
555 Seventeenth Street • Suite 2400 • Denver, Colorado 80202 • Telephone 303/298-1000 • Fax 303/299-1518

June 17, 2008

Ms. Diana Mason
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

RE: Hjorth Canyon 13-16 well

Dear Diana:

Enclosed please find the corrected sundry describing Anschutz Exploration Corporation's plans to drill the Hjorth Canyon 13-16 well directionally. I apologize again for the confusion.

Please contact me if you have any questions.

Sincerely,

Ardith Barbosa
Anschutz Exploration Corporation
(303) 299-1532

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. DJJ
2. CDW

Change of Operator (Well Sold) **X - Operator Name Change/Merger**

The operator of the well(s) listed below has changed, effective: **12/31/2007**

FROM: (Old Operator):	**TO:** (New Operator):
N2730-Ansbro Petroleum Company, LLC	N7940-Anschutz Exploration Corporation
555 17th St, Suite 2400	555 17th St, Suite 2400
Denver, CO 80202	Denver, CO 80202
Phone: 1 (303) 298-1000	Phone: 1 (303) 298-1000

CA No. **Unit:** **HJORTH CANYON**

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS	
HJORTH CYN U 13-16	16	110S	040E	4304930021		Federal	OW	APD	C

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: _____
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: _____
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** _____
4a. Is the new operator registered in the State of Utah: _____ Business Number: _____
4b. If **NO**, the operator was contacted contacted on:
5a. (R649-9-2)Waste Management Plan has been received on: IN PLACE
5b. Inspections of LA PA state/fee well sites complete on: n/a
5c. Reports current for Production/Disposition & Sundries on: _____
6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM 5/28/2008 BIA
7. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: 5/28/2008
8. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/19/2008
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/19/2008
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: n/a
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: COB000111
2. Indian well(s) covered by Bond Number: n/a
3a. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a
3b. The **FORMER** operator has requested a release of liability from their bond on: n/a

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-77270

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME: Hjorth Canyon

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation, as Successor in Interest to Ansbro Petroleum Co., LLC.

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th Street, Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 225' FSL, 527 FWL

COUNTY: Utah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/8/2008	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
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	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
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Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Operator name change: Ansbro Petroleum Company, LLC merged into Anschutz Exploration Corporation effective December 31, 2007. N2730 N7940

Attached is an original Certificate of Merger from the Colorado Secretary of State and a copy of the BLM Notice "Merger Recognized and Bond Rider Accepted".

BOND COB000111

NAME (PLEASE PRINT) Keith Bonati TITLE Sr. Landman

SIGNATURE DATE 6/12/2008

(This space for State use only)

APPROVED 6/19/2008
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

RECEIVED
JUN 13 2008
DIV. OF OIL, GAS & MINING

(5/2000)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215-7076

IN REPLY REFER TO:
3106(MM)
BLM Bond No.
COB000111
UTU077267, et. al.

May 28, 2008

NOTICE

Anschutz Corporation,
Anschutz Exploration Corp., and
Anschutz Pinedale Corp.
2400 Anaconda Tower
555 17th Street
Denver, CO 80202

Oil and Gas

Merger Recognized
Bond Rider Accepted

On May 28, 2008, we received acceptable evidence concerning the merger of Ansbro Petroleum Company, LLC, a Colorado Limited Liability Company with and into Anschutz Exploration Corporation, a Delaware Corporation, with Anschutz Exploration Corporation as the surviving entity.

For our purposes we are recognizing the merger effective December 31, 2007, as certified by the Secretary of the State of Colorado.

We also received a rider to the nationwide bond held by Anschutz Corporation secured by Liberty Mutual Insurance Company removing Ansbro Petroleum Company, LLC as a bonded co-principal on surety bond number 95004368 (BLM Bond No. COB000111). The rider was accepted effective April 17, 2008.

The oil and gas lease files identified on the enclosed exhibit, compiled from our automated records, will be documented with a copy of this merger notice by the Utah, Wyoming and Montana State Offices. If the exhibit also reflects serial numbers of agreements where you are the operator those records will also be updated.

We are notifying the Minerals Management Service of the merger by copy of this notice. If you find additional leases where the merging parties maintain an interest, please contact this office. We will document the records under our jurisdiction, and if the leases are under the jurisdiction of another State Office, we will notify them.

If you have any questions or need further assistance, please call Martha Maxwell at (303) 239-3768.

Martha L. Maxwell, LLE
Fluid Minerals Adjudication

Enclosure
Exhibit of leases

cc: MMS-Minerals Revenue Mgmt Reporting Service, MS3571
Utah SO, Wyoming SO, Montana SO
Posted to BLM OG Internet Forum

STATE OF COLORADO

DEPARTMENT OF STATE

CERTIFICATE

I, MIKE COFFMAN, SECRETARY OF STATE OF THE STATE OF COLORADO HEREBY CERTIFY THAT ACCORDING TO THE RECORDS OF THIS OFFICE, A STATEMENT OF MERGER WAS FILED ON DECEMBER 31, 2007, WITH AN EFFECTIVE DATE OF DECEMBER 31, 2007, EVIDENCING THE MERGER OF

ANSBRO PETROLEUM COMPANY, LLC
(COLORADO LIMITED LIABILITY COMPANY)

INTO

ANSCHUTZ EXPLORATION CORPORATION
(DELAWARE CORPORATION), THE SURVIVOR.

Dated: May 20, 2008

Mike Coffman

SECRETARY OF STATE

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: n/a

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon Unit 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th St., Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 225' FSL 527' FWL

COUNTY: Utah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/20/2008	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
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Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Anschutz Exploration Corporation proposes to directionally drill the Hjorth Canyon 13-16 well to a more favorable structural position. The proposed bottom hole location will be 1,419' FSL and 1,791' FEL of Section 16, T11S, R4E.

A new plat and directional plan are attached.

459106X 39.859751
4412091Y -111.478086

Approved by the Utah Division of Oil, Gas and Mining

Date: 06-19-08

By:

COPY SENT TO OPERATOR
Date: 6-24-2008
Initials: KS

NAME (PLEASE PRINT) James P. Oursland TITLE Vice President of Engineering and Operations

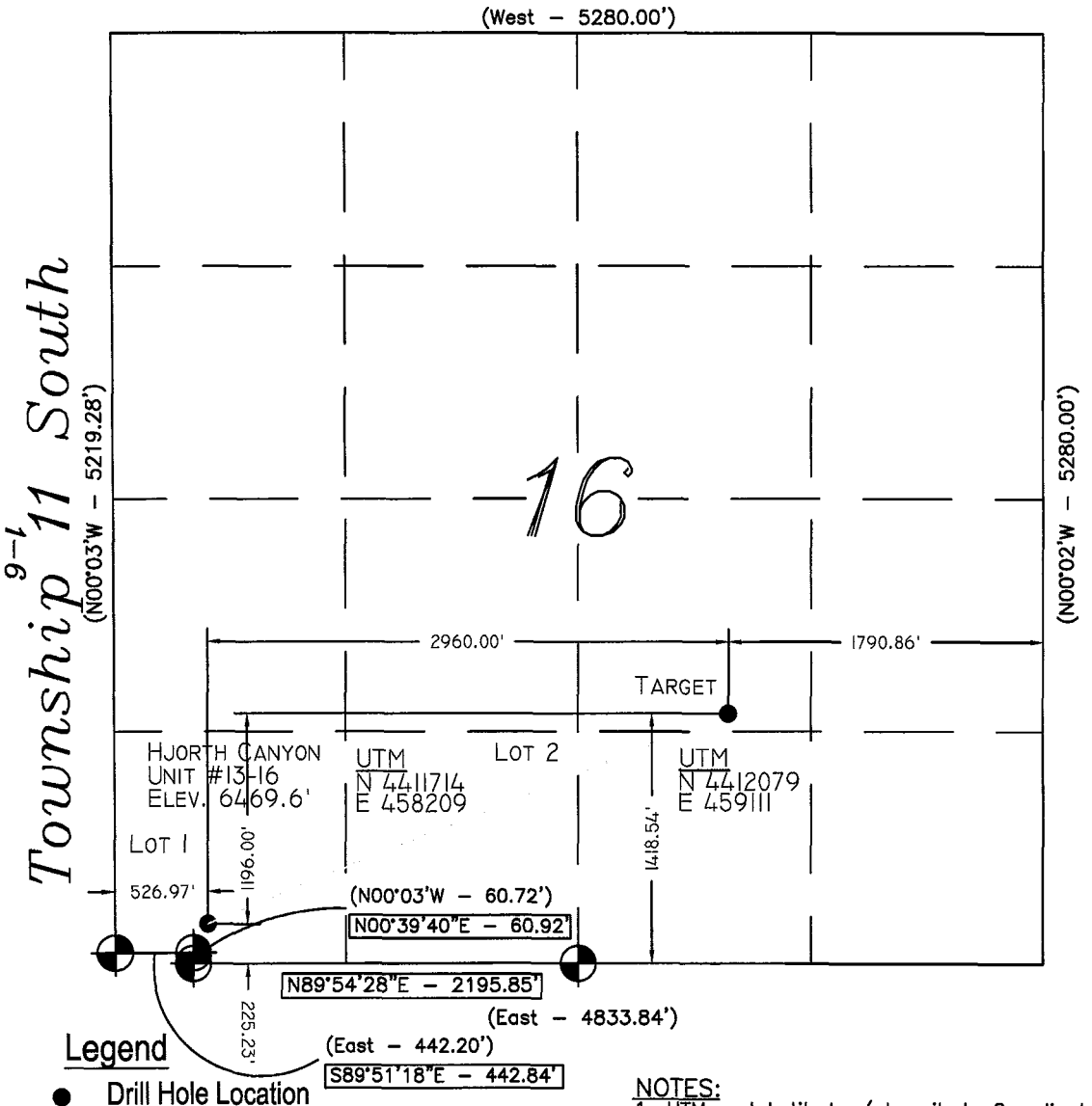
SIGNATURE James Oursland DATE 6/17/2008

RECEIVED
JUN 18 2008
DIV. OF OIL, GAS & MINING

(This space for State use only)

(5/2000) (See Instructions on Reverse Side)

Range 4 East



Legend

- Drill Hole Location
- Brass Cap (Found)
- Brass Cap (Searched for, but not found)
- Rock Pile
- ( ) GLO

GPS Measured

NOTES:
1. UTM and Latitude / Longitude Coordinates are derived using a GPS Pathfinder and are shown in NAD 27 Datum.

SURFACE	TARGET
LAT / LONG	LAT / LONG
39°51'22.727" N	39°51'34.724" N
111°29'18.782" W	111°28'40.905" W

GRAPHIC SCALE
0 500' 1000'
(IN FEET)
1 inch = 1000 ft.
Revision: 6/8/08

Location:
The well location was determined using a Trimble 5700 GPS survey grade unit.

Basis of Bearing:
The Basis of Bearing is GPS Measured.

GLO Bearing:
The Bearings indicated are per the recorded plat obtained from the U.S. Land Office.

Basis of Elevation:
Basis of Elevation of 5905' being at the intersection of US–89 and Hjorth Canyon Road in Section 19, Township 11 South, Range 4 East, Salt Lake Base & Meridian, as shown on the Spencer Canyon Quadrangle 7.5 Minute Series Map.

Description of Location:
Surface
Proposed Drill Hole located in the SW/4 SW/4 of Section 16, T11S, R4E, S.L.B.&M., being North 225.23' from South Line and East 526.97' from West Line of Section 16, T11S, R4E, Salt Lake Base & Meridian.

Target
Proposed Target located in the NW/4 SE/4 of Section 16, T11S, R4E, S.L.B.&M., being North 1418.54' from South Line and West 1790.86' from East Line of Section 16, T11S, R4E, Salt Lake Base & Meridian.

Surveyor's Certificate:
I, Albert J. Spensko, a Registered Professional Land Surveyor, holding Certificate 146652 State of Utah, do hereby certify that the information on this drawing is a true and accurate survey based on data of record and was conducted under my personal direction and supervision as shown hereon.

Registered Professional Land Surveyor
No. 146652
Albert J. Spensko
State of Utah

TALON RESOURCES, INC.
615 North 400 East P.O. Box 1230
Huntington, Utah 84528
Phone (435)687-5310 Fax (435)687-5311
E-Mail talon@etv.net

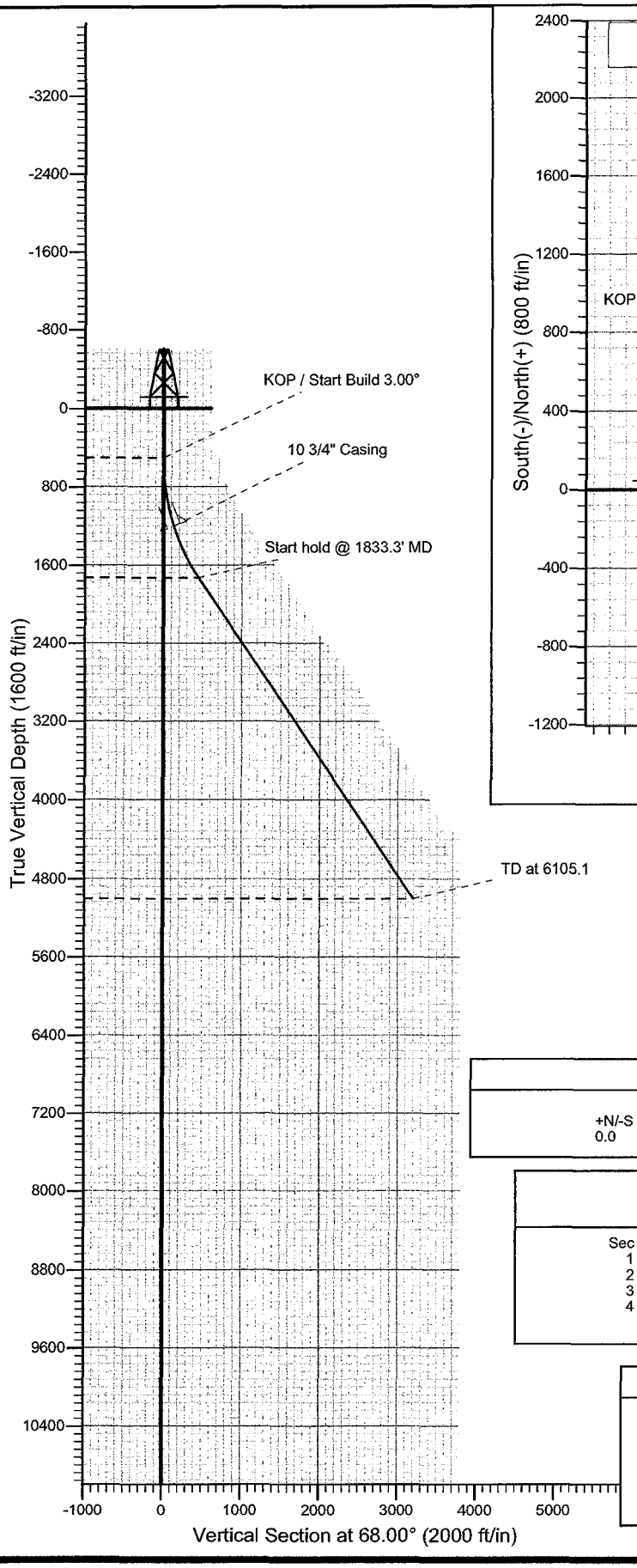
ANSCHUTZ EXPLORATION CORPORATION

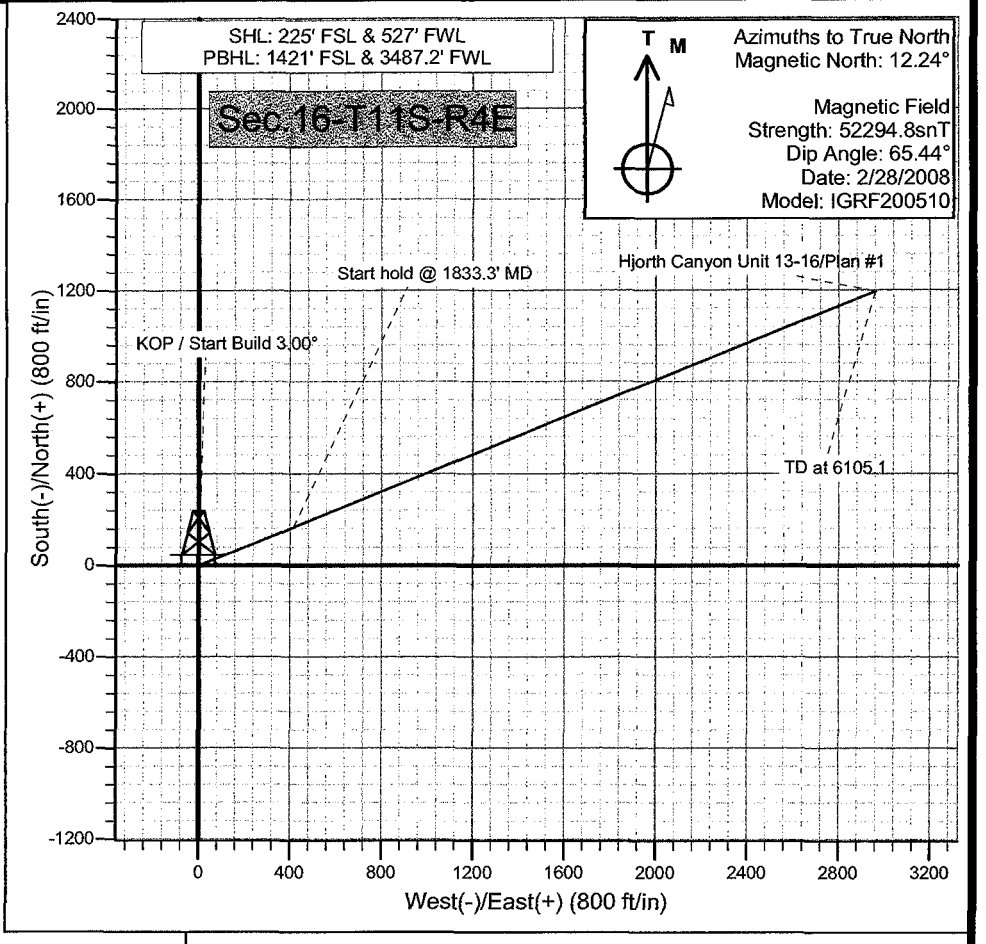
Hjorth Canyon Unit #13–16
Section 16, T11S, R4E, S.L.B.&M.
Utah County, Utah

Drawn By:	Checked By:
N. BUTKOVICH	L.W.J./A.J.S.
Drawing No.	Date:
A–1	10/5/07
	Scale: 1" = 1000'
Sheet 1 of 4	Job No. 3088/3624

Company: Anschutz Exploration Corp.
Project: Utah County, UT (NAD27)
Site: Sec.16-T11S-R4E
Well: Hjorth Canyon Unit 13-16
Wellbore: Wellbore #1
Plan: Plan #1 (Hjorth Canyon Unit 13-16/Wellbore #1)

PATHFINDER ENERGY SERVICES





CASING DETAILS

TVD	MD	Name	Size
1200.0	1216.7	10 3/4" Casing	10-3/4

WELL DETAILS: Hjorth Canyon Unit 13-16

Ground Level: 6470.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	554709.10	2003214.18	39° 51' 22.727 N	111° 29' 18.782 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1833.3	40.00	68.00	1727.6	167.4	414.3	3.00	68.00	446.8	
4	6105.1	40.00	68.00	5000.0	1196.0	2960.2	0.00	0.00	3192.7	

ANNOTATIONS

TVD	MD	Annotation
500.0	500.0	KOP / Start Build 3.00°
1727.6	1833.3	Start hold @ 1833.3' MD
5000.0	6105.1	TD at 6105.1

Anschutz Exploration Corp.

Utah County, UT (NAD27)
Sec.16-T11S-R4E
Hjorth Canyon Unit 13-16
Wellbore #1

Plan: Plan #1

Pathfinder Planning Report

28 February, 2008

PATHFINDER
ENERGY SERVICES

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Utah County, UT (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Utah Central 4302		

Site	Sec.16-T11S-R4E				
Site Position:		**Northing:**	554,709.10 ft	**Latitude:**	39° 51' 22.727 N
From:	Lat/Long	**Easting:**	2,003,214.18 ft	**Longitude:**	111° 29' 18.782 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.01 °

Well	Hjorth Canyon Unit 13-16					
Well Position	**+N/-S**	0.0 ft	**Northing:**	554,709.10 ft	**Latitude:**	39° 51' 22.727 N
	+E/-W	0.0 ft	**Easting:**	2,003,214.18 ft	**Longitude:**	111° 29' 18.782 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,470.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	2/28/2008	12.24	65.44	52,295

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	68.00	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,833.3	40.00	68.00	1,727.6	167.4	414.3	3.00	3.00	0.00	68.00	
6,105.1	40.00	68.00	5,000.0	1,196.0	2,960.2	0.00	0.00	0.00	0.00	

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
KOP / Start Build 3.00°									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	3.00	68.00	600.0	1.0	2.4	2.6	3.00	3.00	0.00
700.0	6.00	68.00	699.6	3.9	9.7	10.5	3.00	3.00	0.00
800.0	9.00	68.00	798.8	8.8	21.8	23.5	3.00	3.00	0.00
900.0	12.00	68.00	897.1	15.6	38.7	41.7	3.00	3.00	0.00
1,000.0	15.00	68.00	994.3	24.4	60.3	65.1	3.00	3.00	0.00
1,100.0	18.00	68.00	1,090.2	35.0	86.7	93.5	3.00	3.00	0.00
1,200.0	21.00	68.00	1,184.4	47.5	117.6	126.9	3.00	3.00	0.00
10 3/4" Casing									
1,216.7	21.50	68.00	1,200.0	49.8	123.2	132.9	3.00	3.00	0.00
1,300.0	24.00	68.00	1,276.8	61.9	153.1	165.1	3.00	3.00	0.00
1,400.0	27.00	68.00	1,367.1	78.0	193.0	208.2	3.00	3.00	0.00
1,500.0	30.00	68.00	1,454.9	95.9	237.2	255.9	3.00	3.00	0.00
1,600.0	33.00	68.00	1,540.2	115.4	285.7	308.1	3.00	3.00	0.00
1,700.0	36.00	68.00	1,622.6	136.6	338.2	364.8	3.00	3.00	0.00
1,800.0	39.00	68.00	1,701.9	159.4	394.6	425.6	3.00	3.00	0.00
Start hold @ 1833.3' MD									
1,833.3	40.00	68.00	1,727.6	167.4	414.3	446.8	3.00	3.00	0.00
1,900.0	40.00	68.00	1,778.7	183.4	454.0	489.7	0.00	0.00	0.00
2,000.0	40.00	68.00	1,855.3	207.5	513.6	554.0	0.00	0.00	0.00
2,100.0	40.00	68.00	1,931.9	231.6	573.2	618.2	0.00	0.00	0.00
2,200.0	40.00	68.00	2,008.5	255.7	632.8	682.5	0.00	0.00	0.00
2,300.0	40.00	68.00	2,085.1	279.8	692.4	746.8	0.00	0.00	0.00
2,400.0	40.00	68.00	2,161.7	303.8	752.0	811.1	0.00	0.00	0.00
2,500.0	40.00	68.00	2,238.3	327.9	811.6	875.3	0.00	0.00	0.00
2,600.0	40.00	68.00	2,314.9	352.0	871.2	939.6	0.00	0.00	0.00
2,700.0	40.00	68.00	2,391.5	376.1	930.8	1,003.9	0.00	0.00	0.00
2,800.0	40.00	68.00	2,468.1	400.1	990.4	1,068.2	0.00	0.00	0.00
2,900.0	40.00	68.00	2,544.7	424.2	1,050.0	1,132.5	0.00	0.00	0.00
3,000.0	40.00	68.00	2,621.4	448.3	1,109.6	1,196.7	0.00	0.00	0.00
3,100.0	40.00	68.00	2,698.0	472.4	1,169.2	1,261.0	0.00	0.00	0.00
3,200.0	40.00	68.00	2,774.6	496.5	1,228.8	1,325.3	0.00	0.00	0.00
3,300.0	40.00	68.00	2,851.2	520.5	1,288.4	1,389.6	0.00	0.00	0.00
3,400.0	40.00	68.00	2,927.8	544.6	1,348.0	1,453.9	0.00	0.00	0.00
3,500.0	40.00	68.00	3,004.4	568.7	1,407.6	1,518.1	0.00	0.00	0.00
3,600.0	40.00	68.00	3,081.0	592.8	1,467.2	1,582.4	0.00	0.00	0.00
3,700.0	40.00	68.00	3,157.6	616.9	1,526.8	1,646.7	0.00	0.00	0.00
3,800.0	40.00	68.00	3,234.2	640.9	1,586.4	1,711.0	0.00	0.00	0.00
3,900.0	40.00	68.00	3,310.8	665.0	1,646.0	1,775.2	0.00	0.00	0.00
4,000.0	40.00	68.00	3,387.4	689.1	1,705.6	1,839.5	0.00	0.00	0.00
4,100.0	40.00	68.00	3,464.0	713.2	1,765.2	1,903.8	0.00	0.00	0.00
4,200.0	40.00	68.00	3,540.6	737.3	1,824.8	1,968.1	0.00	0.00	0.00
4,300.0	40.00	68.00	3,617.2	761.3	1,884.4	2,032.4	0.00	0.00	0.00
4,400.0	40.00	68.00	3,693.8	785.4	1,944.0	2,096.6	0.00	0.00	0.00
4,500.0	40.00	68.00	3,770.4	809.5	2,003.6	2,160.9	0.00	0.00	0.00
4,600.0	40.00	68.00	3,847.0	833.6	2,063.2	2,225.2	0.00	0.00	0.00
4,700.0	40.00	68.00	3,923.6	857.7	2,122.8	2,289.5	0.00	0.00	0.00
4,800.0	40.00	68.00	4,000.2	881.7	2,182.4	2,353.8	0.00	0.00	0.00
4,900.0	40.00	68.00	4,076.8	905.8	2,242.0	2,418.0	0.00	0.00	0.00
5,000.0	40.00	68.00	4,153.4	929.9	2,301.6	2,482.3	0.00	0.00	0.00
5,100.0	40.00	68.00	4,230.0	954.0	2,361.2	2,546.6	0.00	0.00	0.00
5,200.0	40.00	68.00	4,306.7	978.1	2,420.8	2,610.9	0.00	0.00	0.00

Pathfinder Energy Services

Planning Report

PATHFINDER ENERGY SERVICES

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.0	40.00	68.00	4,383.3	1,002.1	2,480.4	2,675.2	0.00	0.00	0.00
5,400.0	40.00	68.00	4,459.9	1,026.2	2,540.0	2,739.4	0.00	0.00	0.00
5,500.0	40.00	68.00	4,536.5	1,050.3	2,599.6	2,803.7	0.00	0.00	0.00
5,600.0	40.00	68.00	4,613.1	1,074.4	2,659.2	2,868.0	0.00	0.00	0.00
5,700.0	40.00	68.00	4,689.7	1,098.4	2,718.8	2,932.3	0.00	0.00	0.00
5,800.0	40.00	68.00	4,766.3	1,122.5	2,778.3	2,996.5	0.00	0.00	0.00
5,900.0	40.00	68.00	4,842.9	1,146.6	2,837.9	3,060.8	0.00	0.00	0.00
6,000.0	40.00	68.00	4,919.5	1,170.7	2,897.5	3,125.1	0.00	0.00	0.00
TD at 6105.1									
6,105.1	40.00	68.00	5,000.0	1,196.0	2,960.2	3,192.7	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,216.7	1,200.0	10 3/4" Casing	10-3/4	12-1/4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.0	500.0	0.0	0.0	KOP / Start Build 3.00°
1,833.3	1,727.6	167.4	414.3	Start hold @ 1833.3' MD
6,105.1	5,000.0	1,196.0	2,960.2	TD at 6105.1

ANSCHUTZ
EXPLORATION CORPORATION
555 Seventeenth Street • Suite 2400 • Denver, Colorado 80202 • Telephone 303/298-1000 • Fax 303/299-1518

June 26, 2008

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

RE: Hjorth Canyon 13-16 well

Dear Sir or Ma'am:

Enclosed please find a sundry describing Anschutz Exploration Corporation's plans to substitute heavier weight casing in the Hjorth Canyon 13-16 well. We have received verbal approval from the Utah BLM for this change.

Please contact me if you have any questions.

Sincerely,

Ardith Barbosa
Anschutz Exploration Corporation
(303) 299-1532

CONFIDENTIAL

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: n/a

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon Unit 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th St., Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 225' FSL 527' FWL

COUNTY: Utah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/27/2008	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☑ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Anschutz Exploration Corporation requests permission to amend the Hjorth Canyon 13-16 casing program to incorporate heavier weight casing.
The new casing properties are as follows:

Hole Size	Csg Size	Weight & Grade	Depth	Thread	Tensile Strength	Burst P	Collapse P	Casing Thickness
17 1/2"	13 3/8"	61#, K55	1,200	ST&C	633ksi	3,090psi	1,540psi	0.430"
12 1/4"	9 5/8"	53.5 L80	700	LT&C	1,047ksi	7,930psi	6,620psi	0.545"
12 1/4"	9 5/8"	53.5 HP110	2,900	LT&C	1,422ksi	10,900psi	7,930psi	0.545"
12 1/4"	9 7/8"	62.8 Q125	3,600	LT&C	1,451ksi	13,840psi	11,140psi	0.625"
8 1/2"	7"	29# L80	6,105	LT&C	587ksi	8,160psi	7,020psi	0.408"

COPY SENT TO OPERATOR
Date: 7·15·2008
Initials: KS

NAME (PLEASE PRINT) Rick Kieffer TITLE Buyer

SIGNATURE DATE 6/26/2008

(This space for State use only)

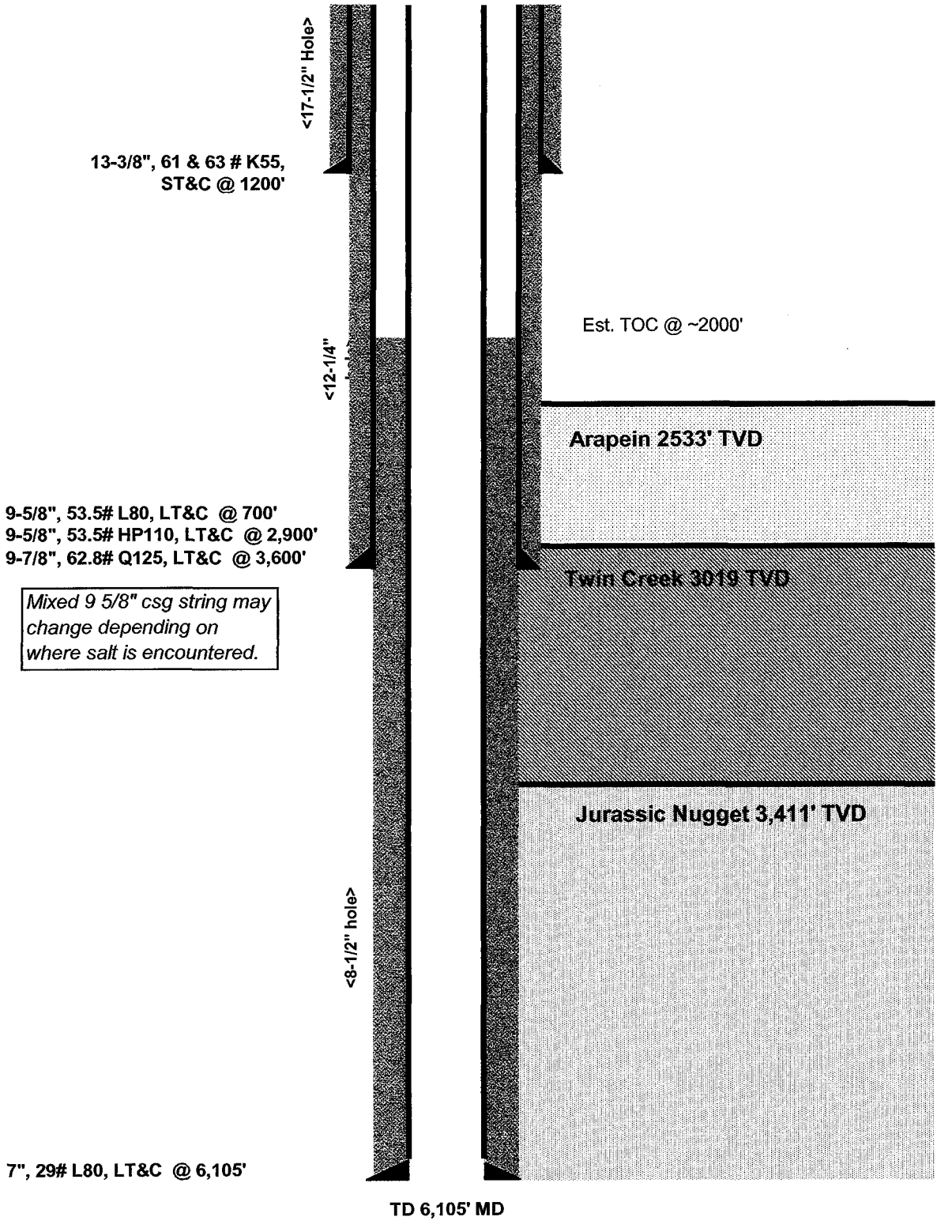
Accepted by the Utah Division of Oil, Gas and Mining
Date: 7/15/08
By:

Federal Approval Of This Action Is Necessary

RECEIVED
JUN 27 2008
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

ANSCHUTZ EXPLORATION CORPORATION WELLBORE SCHEMATIC	
SEC: 16-T11S-R4E 225' FSL; 527' FWL	WELL NAME: **Hjorth Canyon 13-16** COUNTY, STATE: Utah County, Utah
TD: 6,105'	GROUND ELEVATION: 6,470' KB ELEVATION: 6,500' (est)



RECEIVED
JUL 01 2008
DIV. OF OIL, GAS & MINING

FORM 6

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM

Operator: Anschutz Exploration Corporation
Operator Account Number: N 7940
Address: 555 17th Street, Suite 2400
city Denver
state CO zip 80202
Phone Number: (303) 298-1000

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304930021	Hjorth Canyon 13-16		SWSW	16	11S	4E	Utah
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
A	99999	16942	6/28/2008			7/14/08	
Comments: JRSC Well spud 1300 hrs 6-28-08. BHL: NWSE						CONFIDENTIAL	

R

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
Comments:							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
Comments:							

ACTION CODES:

- **A** - Establish new entity for new well (single well only)
- **B** - Add new well to existing entity (group or unit well)
- **C** - Re-assign well from one existing entity to another existing entity
- **D** - Re-assign well from one existing entity to a new entity
- **E** - Other (Explain in 'comments' section)

James P. Oursland
Name (Please Print)
Signature
Vice President
Title
6/30/2008
Date

(5/2000)

CONFIDENTIAL

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

7. UNIT or CA AGREEMENT NAME: n/a

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon Unit 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th St., Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 225' FSL 527' FWL

COUNTY: Utah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☑ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion: _____	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Anschutz Exploration Corporation plugged and abandoned the Hjorth Canyon 13-16 on July 25, 2008. The plugging was witnessed by Randy Knight of the Bureau of Land Management.

A well sketch describing placement of the plugs is attached.

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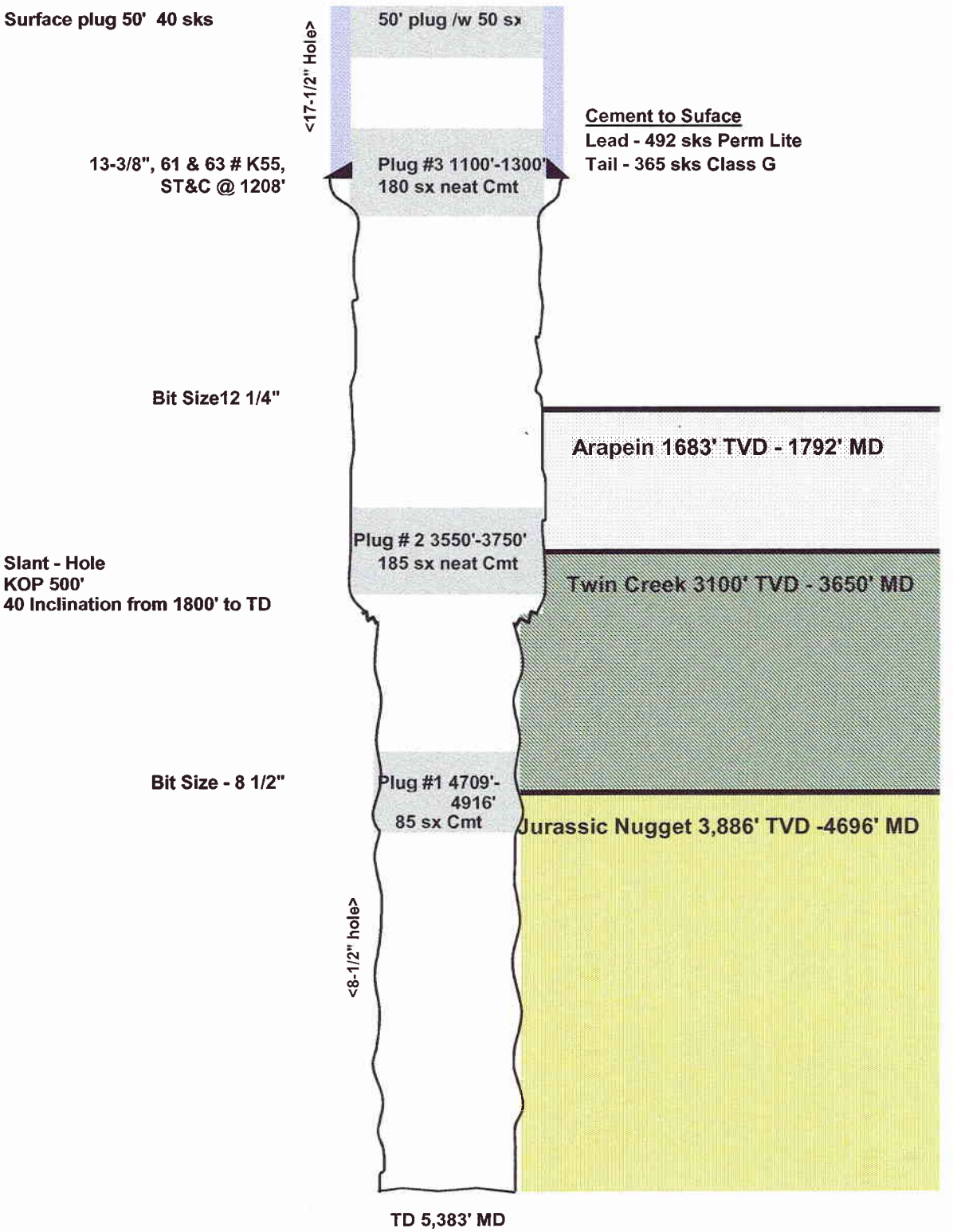
NAME (PLEASE PRINT) James Oursland TITLE Vice President of Engineering and Operations

SIGNATURE James Oursland DATE 7/31/2008

(This space for State use only)

(5/2000) (See Instructions on Reverse Side)

ANSCHUTZ EXPLORATION CORPORATION WELLBORE SCHEMATIC	
SEC: 16-T11S-R4E 225' FSL; 527' FWL	WELL NAME: **Hjorth Canyon 13-16** COUNTY, STATE: Utah County, Utah
TD: 6,105'	GROUND ELEVATION: 6,470' KB ELEVATION: 6,482' (surface cmt report 7-3-08)



P&A

ANSCHUTZ EXPLORATION CORPORATION

HJORTH CANYON UNIT 13-16

SW SW SEC 16 T11S R4E

UTAH COUNTY, UTAH

WELLSITE GEOLOGIST'S REPORT

CONFIDENTIAL

DIRECTIONAL HOLE

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T. M. McCOY & CO., INC.
CONSULTING GEOLOGISTS

SKYLINE RANCH • P.O. BOX 608 • WILSON, WYOMING 83014 • 307 733-4332

ANSCHUTZ EXPLORATION CORPORATION

HJORTH CANYON UNIT 13-16

SW SW SEC 16 T11S R4E

UTAH COUNTY, UTAH

SUMMARY

Anschutz plugged and abandoned the Hjorth Canyon Unit 13-16 after drilling the central Utah Thrust Belt wildcat to 5383' TD in the Jurassic Navajo Sandstone. Evaluation included samples, CCD/TCD total gas, and CCD chromatography from a two-person mud logging unit. Schlumberger ran induction, neutron, density, sonic, and dipmeter logs and cut rotary sidewall cores in the Twin Creek and Navajo. There were no DSTs.

The well sought oil or gas at a structurally higher position than had been tested by the 1978 Union Oil Federal 1-J9, SW NE SEC 9 T11S R4E, 1 1/2 miles to the north. The 2005 Ansbro Petroleum Brown's Peak 33-28D dry hole, SW SE SEC 28 T11S R4E, lies 2 miles south but in a separate thrust plate. The Hjorth Canyon Unit 13-16 section has been thrust twenty-some miles farther than that at the Brown's Peak 33-28D.

Drilling

There were no major drilling problems, especially for the Thrust Belt. The well was drilled directionally NE at 40 deg inclination. No salt was found in the Arapien, chlorides 1800 ppm at most. Drilling continued with fresh polymer-gel mud and intermediate casing was not needed. Hole-size was reduced in the Twin Creek.

Circulation was partially lost, likely in vuggy dolomite in the Gypsum Spring Mbr. of the Twin Creek, just above the Navajo. The dipmeter was stuck on bottom, probably from rocks falling in from the Arapien or Twin Creek. It was recovered undamaged on first fishing run. Sample quality was good initially but deteriorated at least by the middle of the Twin Creek. Two large shallow washouts may have caused increasingly poor samples. The wellsite geologist re-ran samples after TD with the aid of logs and relied heavily on the good sidewall cores.

Twin Creek Limestone

There were no substantial shows in the Twin Creek. Fracture intensity seems relatively low for the Thrust Belt and evidence of open fractures is extremely rare. A brief gas increase to 40 units in the upper Watton Canyon Mbr. is the only slight gas show in the Twin Creek and is the best in the well.

A thick solid anhydrite was drilled in the middle of the Twin Creek. It is conspicuous on logs for 56 ft but is almost entirely missing in samples. With regard to good seals in the prospect, thick anhydrite is also found in the Union Oil Federal 1-J9 and 13 miles north at the Billy's Mountain road cut on US Hwy 6.

Sidewall cores confirm good to excellent porosity shown on logs in a 10-ft thick limestone, 100 ft below the main anhydrite. The oolitic limestone is slightly dolomitized; porosity is vuggy to oomoldic. Medium bright yellow fluorescence is mineral fluorescence; there was no oil stain and only slight cut fluorescence.

Navajo Sandstone

The Navajo is clean but wet, with no gas show. Trace sample shows are bona fide but very weak; they are found in the sidewall cores in the top 170 ft where the dune sandstone is white to very light gray, becoming very pale orange. There are virtually no shows deeper where the sandstone becomes moderate orange pink to partly reddish brown. Pore distribution is non-uniform and in all core chips streaks of highly silica cemented sandstone alternate with areas of much better permeability and porosity. Pores often appear vuggy and quartz overgrowth is common. Occasionally, intergranular porosity is relatively unaltered.

Porosity in the top 300 ft of Navajo averages 9.5% density, 9.1% neutron, and 9.2% sonic. Visual porosity in the Navajo sidewall cores is fair, 8 – 12%, and appears adequate to produce either gas or oil.

T. M. McCoy

T. M. McCoy, Consulting Geologist
9 August 2008

WELL DATA

OPERATOR:	Anschutz Exploration Corporation	
WELL NAME:	Hjorth Canyon Unit 13-16	
SURFACE LOCATION:	Approx 225' FSL & 527' FWL SW SW Section 16, T11S, R4E Utah County, Utah	
LATITUDE & LONGITUDE:	39.85648° N & 111.48708° W	
BOTTOM HOLE LOCATION:	922' N & 2614' E of surface location (straight-line projection to rig TD)	
ELVATIONS:	6469' Graded GL	6482' KB
API NUMBER:	43-049-30021	
FIELD:	Wildcat	
ROAD DIRECTIONS:	From Spanish Fork E 14 miles on US Highway 6; S 13 miles on US Highway 89 to mile marker 299.6; E 2.0 miles on gravel road up to location.	
CONDUCTOR:	20" at 150' GL, 163' KB	
SURFACE CASING:	13 3/8" 61# set at 1208' KB	
SPUD DATE:	28 June 2006	1:00 PM
DRILLING COMPLETED:	18 July 2006	4:00 PM
TOTAL DEPTH:	5383' Rig TD	5378' Log TD
MAXIMUM TEMPERATURE:	129 deg F at 5378'	
LAST FORMATION:	Navajo Ss	
WELL STATUS:	Plugged and abandoned	
OPERATOR REPRESENTATIVES:	Justin Tully – Geology Dan Bean – Geology Scott Hajicek – Geophysics Kurt Constenius (Consultant) – Geophysics & Surface Geology Jim Oursland – Operations Manager	
WELLSITE SUPERVISION:	Ken Clare	

FORMATION TOPS

Formation	Sample Top	Log Top	TVD	Datum	Drilled
KB				6482	Thickness
CRETACEOUS					
Indianola Fm.	Surface	Surface			1090
JURASSIC					
Twist Gulch Fm.	1094	1090	1080	5402	702
Arapien Fm.	1796	1792	1689	4793	2020
Twin Creek Ls.					
Watton Canyon Mbr.	3816	3812	3219	3263	414
Boundary Ridge Mbr.	4230	4226	3529	2953	20
Rich/Slide Rock Mbrs. Undiv.	4250	4246	3544	2938	402
Gypsum Spring Mbr.	4652	4648	3849	2633	48
JURASSIC					
Navajo Ss.	4700	4696	3886	2596	682
TD Driller	5383		4412	2070	
TD Logger		5378	4408	2074	

TVD for log TD is straight-line projection from last survey.

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Logging geologists collected lagged 20-ft and some 30-ft samples depending on rate of penetration. Wireline logs show that sample quality was fair to poor with less definition than was perceived during drilling. Samples were re-run with the aid of wireline logs. Depths are rig depths except where noted as wireline.

Grain size was determined by use of the American Stratigraphic Company comparator. Colors of dry cuttings were determined from the Rock-Color Chart distributed by the Geological Society of America. 10% HCl was used in acid reaction tests.

Cut tests for hydrocarbons were performed with trichloroethylene. Significant shows are marked in the left margin; lesser indications of hydrocarbons are contained in sample descriptions. Samples were examined for fluorescence with a Corvascope.

Conductor: 20" set at 161' KB.

INDIANOLA FM.

161' – 210' **Sandstone/Conglomerate**; overall light gray; clusters of white upper very fine to lower fine grained clean silica cemented sandstone with slight to fair porosity may be matrix; some loose medium to coarse grained subround to round quartz sand; abundant siliceous fragments: white to light gray, some lightly stained yellowish orange and grayish pink, fine grained quartzitic sandstone/quartzite; also white, light gray, medium gray, brownish gray and trace dark gray chert; occasional partly rounded weathered exterior surfaces and abundance of freshly angular lithic fragments suggest broken pebbles or cobbles; staining in Alizarin Red shows trace limestone fragments; trace dark brownish gray slightly calcareous shale clasts. No show.

210' – 260' **Sandstone/Conglomerate**; overall tinted grayish orange pink due to pale reddish brown mudstone that likely disintegrated in the drilling mud and has partially coated the cuttings; recovered as loose grains and lesser pebble/cobble fragments; otherwise similar to above. No show.

260' – 320' **Conglomerate**; overall pale red but cuttings are varicolored white, pale red to grayish orange pink, reddish brown, dark yellowish brown; recovered mostly as broken pebbles/cobbles of sandstone, chert, and minor limestone; upper fine to very coarse grained; sandstone clasts are moderately to very calcareous and tight; matrix may be moderate reddish orange sandy mudstone that is moderately calcareous. Grades downhole to **Conglomeratic Siltstone** and **Sandstone**; pale reddish brown tinted orange. Trace to 10% **Shale**; moderate reddish brown; firm; noncalcareous, flakes apart in acid; quite smooth to slightly sandy. No show.

320' – 340' 50% **Shale**; grayish brown (5YR 3/2); quite smooth to slightly sandy; firm; slightly calcareous, flakes apart in acid; subblocky. 30% **Conglomeratic Sandstone**. 20% **Sandy Siltstone**; pale to moderate brown (5YR 5/3). No show.

LITHOLOGY AND SHOWS

340' – 380' — 50% **Conglomeratic Sandstone**; light gray, part tinted pale reddish brown; clusters rare, recovered mostly as loose fine to medium to some coarse grained sand with minor clasts of broken pebbles; rare contacts with grayish to moderate brown shale. 30% **Siltstone**; pale to moderate brown (5YR 5/3); partly sandy; firm; calcareous; rounded, subblocky. 20% **Shale**; grayish brown (5YR 3/2); mostly smooth; firm; slightly calcareous, flakes apart in acid; coarse platy, subblocky. No show.

380' – 500' — 50 – 70% **Sandstone**; light to moderate brown (5YR 5/3); clusters are very fine to medium grained with minor dispersed coarse to very coarse lithics, also loose fine to coarse grained light gray to orange-stained quartz sand; subangular to round; moderately well to poorly sorted; firm to medium hard clusters; moderately to some very calcareous; mostly no porosity visible. 30 – 20% **Siltstone**; moderate brown (5YR 4/3), some tinted reddish brown (10R 4/4); part very fine grained sandy; firm; slightly to moderately calcareous; trace micro-micaceous; subblocky, rounded. 10 – 20% **Shale**; grayish brown (5YR 3/2); mostly smooth; firm; non- to slightly calcareous; occasionally micro-micaceous; subblocky, some platy; few possible slickensides. No show.

Remarks: Rough drilling out from surface casing gradually became smoother as conglomerate decreased downhole.

Scattered trace chips of bright red-orange silica are likely fracture-fill. Some are reworked and rounded.

500' – 600' — 70 – 80% **Sandstone**; moderate brown (5YR 5/3), some tinted moderate reddish orange, few streaks light gray; very fine to occasionally medium grained with minor dispersed and loose coarse to very coarse grained lithics; subangular to round; well to poorly sorted; firm; moderately calcareous; tight. 20% **Siltstone**; moderate brown; commonly very fine grained sandy; firm; calcareous; subblocky, rounded. Trace – 10% **Shale**; grayish brown (5YR 3/2); smooth, occasionally silty or with floating sand grains; firm; very slightly to slightly calcareous; coarse platy, subblocky. No show.

600' – 700' — 60 – 80% **Sandstone**; moderate brown, minor light brown, few streaks light gray; very fine to occasionally medium grained with minor loose coarse to very coarse grained lithics; subangular to round; well to moderately sorted clusters, streaks likely poorly sorted; firm; moderately to some slightly calcareous; tight. 20% **Siltstone**; moderate brown; commonly very fine grained sandy; firm; calcareous; subblocky, rounded. Trace – 20% **Shale**; grayish brown (5YR 3/2); mostly smooth; firm; very slightly calcareous, in acid chips flake slightly but most remain intact; coarse platy, subblocky. No show.

700' – 820' — 70 – 80% **Sandstone**; moderate brown to light brown; very fine to occasionally medium grained clusters; trace – 10 – 20 – 40 – 20 – 20% loose medium to coarse quartz sand and occasional lithics; subangular to round, particularly loose sand; well to moderately sorted clusters; firm; slightly to some moderately calcareous; tight. 20 – 30% **Siltstone**; moderate brown; very fine grained sandy; firm; slightly to moderately calcareous; subblocky, rounded. 10% to Trace **Shale**; grayish brown (5YR 3/2); much is smooth, occasionally silty or sandy; firm; non- to very slightly

LITHOLOGY AND SHOWS

calcareous; some as paper thin laminae contacting mudstone and very fine grained sandstone; coarse platy, subblocky. No show.

820' – 900' — 80 – 70% **Sandstone**; moderate brown to light brown; very fine to occasionally medium grained clusters; sharp decrease to only trace loose medium to coarse sand; subangular; well to moderately sorted clusters; firm; slightly to some moderately calcareous; tight. 20% **Siltstone**; moderate brown; very fine grained sandy; firm; slightly to moderately calcareous; subblocky, rounded. 10% to Trace **Shale**; grayish brown (5YR 3/2); much is smooth, occasionally silty or sandy; firm; non- to very slightly calcareous; some as paper thin laminae contacting mudstone and very fine grained sandstone; coarse platy, subblocky; slickensides common at base. No show.

900' – 1000' — 70 – 80% **Sandstone**; pale brown (5YR 6/2), light to moderate brown (5YR 5/4); very fine and fine grained with minor dispersed medium grains in part; subangular to subround; well to moderately sorted; firm, medium hard; slightly to moderately calcareous; tight, rare slight porosity visible. 20 – 10% **Siltstone**; light to moderate brown; commonly very fine grained sandy; firm; slightly to moderately calcareous; subblocky. Trace – 5% **Shale**; grayish brown; smooth; firm; very slightly calcareous; coarse platy, subblocky; few slickensides. Rare **Calcite**, **Anhydrite**, and **Silica Frac Fill**. No show.

1000' – 1094' — 80 – 90% **Sandstone**; moderate brown, minor light brown; very fine to fine grained clusters with minor dispersed medium grains; trace – 20 – 50 – 70 – 30% loose predominantly medium to coarse rounded quartz sand; firm to medium hard clusters; slightly to moderately calcareous; mostly no porosity visible. 10% **Siltstone**; grayish brown (5YR 4/3); commonly very fine grained sandy; firm; slightly to moderately calcareous; subblocky. Trace – 10% **Shale**; grayish brown; smooth; firm; non- to slightly calcareous; coarse platy, subblocky; occasional slickensides. Trace **Anhydrite Frac Fill**; clear sparry firm fragments, trace opaque white soft masses. No show.

TWIST GULCH FM. — SAMPLE TOP: 1094' LOG: 1090' TVD: 1080' DATUM: +5402'

1094' – 1210' — Interbedded, gradational. 30 – 60% **Sandstone**; light brown, part tinted moderate brown; very fine to upper fine grained; subangular, subrounded; moderately well to occasionally moderately sorted; firm, medium hard; slightly to some moderately calcareous; some slightly anhydritic; mostly no porosity visible. 30 – 70% **Siltstone**; moderate brown (5YR 5/4); much is very fine grained sandy, occasional shaly partings; firm; slightly to some moderately calcareous; subblocky. Trace – 5% **Shale**; grayish brown, thin flakes in acid are moderate brown; smooth; firm; very slightly calcareous; coarse platy, subblocky, irregular. Trace to few chips: **Silica/Chalcedony**; bright red orange, with lesser light gray to white/clear; occasional distinct agate-like banding, probable replacement of anhydrite. Trace to rare **Anhydrite**; clear sparry firm chips, few opaque white soft masses. No show.

LITHOLOGY AND SHOWS

Remarks: At Anschutz Ranch similar red-orange chalcedony is found in the Preuss Red Beds above the Preuss Salt. At the Ansbro Brown's Peak Federal 33-28D red-orange chalcedony is found in the Arapien Fm, above and in the Arapien Salt. At the Sohio Indianola #1, where salt is absent, red-orange chalcedony is found in the Twist Gulch Fm and Arapien Fm, with minor occurrences extending down into the Twin Creek Fm.

Surface Casing: 13 3/8" 61# set at 1208' KB.

1210' – 1300' 60 – 30% **Sandstone**; pale brown (5YR 5/3); very fine to fine grained with occasional dispersed medium grains; subangular, subround; well to moderately sorted; firm, medium hard; slightly to some moderately calcareous; no porosity visible. At 1278' thin **Sandstone**; light brown (5YR 6/3); upper very fine to upper coarse grained; subangular, subround; moderately to poorly sorted; firm; slightly to moderately calcareous; no porosity visible. 40 – 70% **Siltstone**; moderate brown (5YR 4/3); very fine grained sandy with occasional floating medium grained quartz sand and lithics; firm; slightly to moderately calcareous; subblocky. Trace – 5% **Shale**; grayish brown; smooth to some silty; firm; non- to slightly calcareous; platy, subblocky. Trace **Silica/Chalcedony**; red-orange to white. Trace **Anhydrite**; loose sparry fragments; white to clear fracture fill; minor opaque white soft rounded masses.

1300' – 1380' 50 – 70% **Sandstone**; light to moderate brown (5YR 6/4 to 5 YR 4/3); very fine to fine grained clusters, 40% to trace loose upper fine to lower very coarse, subangular to round quartz sand; moderately well sorted clusters; firm; moderately to slightly calcareous; no porosity visible. 20 – 40% **Siltstone**; pale to moderate brown; very fine grained sandy, part argillaceous; firm; slightly to moderately calcareous; subblocky, rounded. 20% – Trace **Shale**; grayish brown to moderate brown; smooth, some silty to very fine grained sandy; firm; non- to slightly calcareous, flakes in acid; coarse platy, subblocky. Trace **Silica/Chalcedony**; red-orange to white, light gray; commonly contacting siltstone or shale. Trace – 2% **Anhydrite**; loose spar, white to clear microcrystalline patches and frac fill, minor opaque white soft masses. No show.

Remark: 1380' – 1525' is the first of two major washouts shown best by caliper on cement volume log.

1380' – 1500' 50 – 70% **Sandstone**; light brown, some faintly moderate orange pink; very fine to fine grained with minor loose medium and rare coarse sand; subangular to round; well to moderately sorted; firm to medium hard clusters; moderately calcareous; part silty, some argillaceous; no porosity visible. 20 – 30% **Siltstone**; moderate brown; argillaceous, commonly very fine grained sandy; firm; slightly calcareous; subblocky. 10 – 20% **Shale**; grayish brown to moderate brown (5 YR 3/3); smooth; firm; non- to slightly calcareous; occasional micro-micaceous partings; platy, subblocky. 2% to Trace **Anhydrite**; white to clear; loose sparry chips and thin veins. 2% to Trace **Silica/ Chalcedony**; bright red orange to light gray and white. No show.

Remark: 1550' – 1750' is the largest washout in the hole.

LITHOLOGY AND SHOWS

1500' – 1600'	70 – 60% **Sandstone**; faint moderate orange pink to light brown; very fine to fine grained clusters, minor loose medium to coarse quartz sand; subround to well rounded; well to moderately sorted; firm to medium hard; slightly to moderately calcareous; black grains in part; no porosity visible. 20 – 30% **Siltstone**; moderate brown; argillaceous, commonly very fine grained sandy; firm; slightly to some moderately calcareous; subblocky. 10 – 20% **Shale**; grayish brown to moderate brown; smooth; firm; very slightly to slightly calcareous; platy; occasional slickensides. Trace to 2% **Anhydrite**; white to clear; loose chips, thin veins, and irregular inclusions. 2% to Trace **Silica/Chalcedony**; red orange to light gray to white. No show.
Remark:	At 1600' hard to wash thick muddy poor sample.
1600' – 1700'	60 – 30% **Sandstone**; tinted moderate orange pink to light brown, some light gray; very fine grained; well sorted; firm, medium hard; moderately to some slightly calcareous; minor black grains; commonly appears anhydritic; no porosity visible. 30 – 50% **Siltstone**; light to moderate brown (5YR5/3 to 5YR 4/4); part argillaceous, some moderate brown shaly laminae, commonly very fine grained sandy; firm, some medium hard; calcareous; subblocky. 10 – 40% **Shale**; moderate brown (5YR 4/4), some grayish brown; smooth, some silty; firm; very slightly to slightly calcareous; coarse platy, subblocky, irregular; *numerous grayish red slickensides* but chips broken open are mostly moderate brown. Rare to Trace **Silica/Chalcedony**; pink-orange to red-orange and light gray to white; associated in part with anhydrite. 2% **Anhydrite**; clear to opaque white; loose spar (splinters up to 1 cm long), thin veins, and microcrystalline to powdery patches and irregular streaks. No show.
Remark:	Major washout may result from anhydritic rocks as well as dipping beds with substantial slickensided shale.
1700' – 1780'	30 – 50% **Sandstone**; light gray tinted moderate orange, light brown; very fine to some fine and medium grained with minor dispersed coarse to very coarse grains (particularly at 1754' – 1760'); subangular to some round; well to some poorly sorted; firm to medium hard; slightly to moderately calcareous; no porosity visible. 30 – 50% **Siltstone/Mudstone**; light to moderate brown; part very fine to medium grained sandy; firm; slightly to moderately calcareous/dolomitic, part disintegrates in acid to powder and flakes; subblocky, rounded. 10 – 20% **Shale**; grayish brown to moderate brown; predominantly smooth; firm; non- to slightly calcareous; platy, subblocky; *slickensides commonly grayish red.* 1% to Trace **Silica/Chalcedony**; bright red-orange to orange pink, light gray to white to clear; agate-like banding in part. Trace – 2% **Anhydrite**; clear to opaque white; loose spar (chunks to 1 cm, one showing probable drag-folding), thin veins, numerous patches and irregular streaks. No show.
Remarks:	Major color change from red-brown to gray in 1780' - 1800' sample.

LITHOLOGY AND SHOWS

ARAPIEN FM. SAMPLE TOP: 1796' LOG: 1792' TVD: 1689' DATUM: +4793'

Remark: Marlstone is used here for the intermediate limy/shaly rocks (35 - 65% lime, 65 - 35% clay) that dominate the Arapien.

1780' – 1880' 30 – 80 – 90 – 100 – 100% **Marlstone**; medium gray; firm to medium hard; chips dissolve in acid leaving powdery argillaceous residue; subblocky; no porosity visible. 10 – 10 – 10 – 0 – 0% **Siltstone**; light to medium light gray; very calcareous, much disintegrates in acid to silty, slightly argillaceous insoluble residue, some chips remain intact but fragile after dissolution of carbonate. Few chips **Anhydrite**; clear to opaque; loose. Trace **Calcite Frac Fill**; white; attached to or cutting marlstone. No show.

1880' – 2000' 40 – 60% **Sandstone**; medium light gray; lower to upper very fine grained, some lower fine grains in part; subangular, subround; well sorted; firm, some medium hard; very calcareous; about half of chips remain intact in acid; trace biotite; mostly no porosity visible. Grades to 10 – 20% **Siltstone**; medium light gray. 50 – 20% **Marlstone**; medium gray, downhole some tinted olive gray; chips dissolve in acid leaving argillaceous powder; firm to medium hard; subblocky, blocky; no porosity visible. 1% to Trace **Anhydrite**; white to clear; soft masses to loose spar. Trace **Quartz**; moderate orange pink; probable fracture fill, some associated with microcrystalline anhydrite. Single **Quartz Crystal**; clear euhedral dipyramid. No show.

2000' – 2100' 40 – 50% **Sandstone**; medium light to light gray; lower to upper very fine grained, some lower fine grained downhole; subangular, subround; well sorted; firm, some medium hard; very calcareous; about half of chips remain intact in acid; trace biotite and few green grains; no porosity visible. Grades to 30 - 10% **Siltstone**; medium light gray; very calcareous. 20 – 40% **Marlstone**; medium gray, downhole some tinted olive gray to greenish gray; chips dissolve in acid leaving argillaceous powder and minor shaly flakes in part; firm to medium hard; subblocky, blocky, some platy; no porosity visible. Few chips **Anhydrite**; white to clear; soft masses to loose spar. Trace to few chips **Quartz**; moderate orange pink; probable fracture fill. Rare **Calcite Frac Fill**; white; cutting or attached to marlstone. No show.

2100' – 2200' 60 – 80% **Marlstone**; medium gray, some tinted olive gray to greenish gray; chips partly dissolve leaving argillaceous powder but also significant shaly and silty flakes; platy, subblocky; no porosity visible. 20 – 10% **Sandstone**; medium light to light gray; mostly very fine grained; moderately to some very calcareous, chips largely remain intact in acid; trace gold-brown biotite and rare green grains; no porosity visible. 20 – 10% **Siltstone**; medium light to light gray; calcareous; subblocky. No show.

2200' – 2300' 80 - 50% **Marlstone**; medium gray, some tinted olive gray to greenish gray; chips dissolve leaving argillaceous powder but also some silty chunks and shaly flakes; platy, subblocky; no porosity visible. 10 – 20% **Sandstone**; medium light to light gray; mostly very fine grained; moderately to some very calcareous, chips largely remain intact in acid; trace gold-brown biotite and rare green grains; no porosity visible. 10 – 30% **Siltstone**; medium light to light gray; moderately to very calcareous; subblocky. No show.

LITHOLOGY AND SHOWS

2300' – 2400' — 70 - 80% **Marlstone**; medium gray, some tinted olive gray to greenish gray; chips dissolve in acid leaving argillaceous powder but also silty and shaly flakes; platy to blocky; no porosity visible. 10% to Trace **Sandstone**; medium light to light gray; mostly very fine grained, some lower fine grains in part; moderately to very calcareous, chips largely remain intact in acid; trace gold-brown biotite and rare green grains; no porosity visible. 10 – 20% **Siltstone**; medium light to light gray; moderately to very calcareous; subblocky. Only few chips **Calcite Frac Fill**; white; attached to marlstone. No show.

2400' – 2500' — 70 - 80% **Marlstone**; medium gray, some tinted olive gray to greenish gray; chips dissolve in acid leaving argillaceous powder; platy, subblocky, minor blocky; no porosity visible. 10% to Trace **Sandstone**; medium light to light gray; mostly very fine grained; moderately to very calcareous, chips mostly remain intact in acid; trace gold-brown biotite and rare green grains; no porosity visible. 10 – 20% **Siltstone**; medium light to light gray; moderately to very calcareous; subblocky. No show.

2500' – 2600' — 70 – 80% **Marlstone**; medium gray; firm, some medium hard; chips dissolve in acid leaving argillaceous powder and minor silty chunks; trace splintery, mostly platy to subblocky; trace gold-brown biotite and pale green grains; no porosity visible. 10 – 20% **Sandstone**; medium to light gray; very fine to some upper fine grained; subangular, subround; well sorted; firm, medium hard; moderately to very calcareous; many chips remain intact in acid. 10% **Siltstone**; medium light to light gray; firm to medium hard; moderately to very calcareous, half remain intact in acid; subblocky. Trace **Limestone**; medium dark to medium light gray; upper very fine to upper fine grained ooliths mixed with lesser quartz sand; mostly darker ooliths set in lighter colored matrix; no porosity visible. No to Trace **Calcite Frac Fill**; white; attached to marlstone. No show.

Remark: — Several shale breaks mainly inferred from wireline logs. In samples, Trace **Shale**; medium gray with olive tint; calcareous but chips remain intact in acid; minor biotite; platy.

2600' – 2700' — 60 – 80% **Marlstone**; medium gray, tinted olive gray in part; smooth, occasional silty laminae; firm, some medium hard; moderately to very calcareous, insoluble residue is argillaceous and silty, powdery and flaky; platy, subblocky; no porosity visible. 10 – 20% **Sandstone**; medium to light gray; very fine to some fine grained; subangular, subround; moderately well sorted; firm to medium hard; moderately to some very calcareous, many chips remain intact in acid; trace biotite and pale green grains; no porosity visible. 10 – 20% **Siltstone**; medium light to light gray; firm, some medium hard; moderately to very calcareous; many chips remain intact in acid; subblocky. Trace **Limestone**; medium light to dark gray; fine grained dark ooliths set in lighter colored matrix; partly silicified, some chips remain partly intact in acid; quartz sandy; no porosity visible. Few chips **Calcite Frac Fill**; white; loose and attached to marlstone. No show.

2700' – 2800' — 70 – 80% **Marlstone**; medium to some medium dark gray, particularly where tinted olive gray; smooth, some silty laminae; firm, some medium hard; moderately to very calcareous, chips dissolve leaving mostly argillaceous powder but some shaly flakes and silty chunks; platy, subblocky; no porosity visible. 10 – 20% **Sandstone**; medium to light gray; mostly very fine grained; moderately well sorted; firm, some

LITHOLOGY AND SHOWS

	medium had; moderately calcareous, most chips remain intact in acid; trace biotite and green grains; no porosity visible. 10% **Siltstone**; medium light to light gray, minor medium gray where more argillaceous; moderately to very calcareous, about half remains intact in acid; subblocky. Few chips to Trace **Calcite Frac Fill**; white, some tinted grayish orange pink; loose and attached to marlstone. No show.
2800' – 2900'	60 – 80% **Marlstone**; medium to some medium dark gray, part tinted olive gray; mostly smooth; firm, some medium hard; moderately to very calcareous; chips disintegrate in acid to abundant shaly flakes, much less argillaceous powder than above, much has become limy shale rather than shaly lime; platy, subblocky. Trace **Shale**; greenish gray; smooth; firm; slightly calcareous, chips flake apart in acid. 10 – 20% **Sandstone**; medium to medium light gray; very fine to fine grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately calcareous, chips mostly remain intact in acid; *trace fine grained ooliths dispersed in sandstone matrix*; more argillaceous where tinted greenish gray; no porosity visible. 10 – 20% **Siltstone**; medium light to light gray; moderately to very calcareous, about half stays intact in acid; subblocky. Trace **Calcite** and lesser **Anhydrite**; white; probable fracture fill; loose and attached. No show.
2900' – 3000'	70 – 80% **Marlstone**; medium to some medium dark gray, part tinted olive gray; mostly smooth; firm, some medium hard; moderately to very calcareous; chips disintegrate in acid to abundant shaly flakes uphole with argillaceous powder increasing downhole—trend is from limy shale uphole to some shaly lime downhole, subblocky. 20% **Siltstone**; medium to light gray; part very fine grained sandy, most chips stay intact in acid; subblocky, blocky. 10% **Sandstone**; medium to medium light gray; very fine to some fine grained; subangular to subround; moderately well sorted; firm, some medium hard; moderately calcareous, most chips remain intact in acid; *trace fine grained ooliths dispersed in sandstone matrix, few chips silicified oolitic packstone*; no visible porosity. Few chips mixed **Calcite** and **Anhydrite Frac Fill**; white. No show.
3000' – 3100'	80 – 50% **Marlstone**; medium to medium dark gray, commonly tinted olive gray; smooth; firm to medium hard; moderately to very calcareous, chips dissolve in acid leaving mix of argillaceous powder, shaly flakes and silty chunks; subblocky, some platy. 10 – 30% **Siltstone**; mostly medium light gray; part very fine grained sandy, some argillaceous; moderately to very calcareous, most chips remain intact in acid; subblocky. 10 – 20% **Sandstone**; medium to medium light gray; very fine to some lower fine grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately to very calcareous, most chips stay intact in acid; no porosity visible. Few chips to trace **Calcite Frac Fill**; white; loose and attached to marlstone. No show.
3100' – 3200'	70 – 50% **Marlstone**; medium to medium dark gray, commonly tinted olive gray, little greenish gray; smooth to silty; firm to medium hard; moderately to very calcareous, chips disintegrate in acid leaving mix of argillaceous powder, shaly flakes and some small silty chunks; subblocky, some platy. 20 – 30% **Siltstone**; medium to light gray; part very fine grained sandy, some argillaceous; moderately to very calcareous, most chips remain intact in acid; subblocky. 10 – 20% **Sandstone**; medium to medium light gray; very fine to some lower fine grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately to very

LITHOLOGY AND SHOWS

	calcareous, most chips stay intact in acid; moderately clean to silty and argillaceous; trace pale green grains and brown-gold biotite; rare micro-pyrite; no porosity visible. Several chips **Limestone**; brownish gray to olive gray; fine grained dark ooliths set in white microcrystalline matrix; moderately clean, insoluble residue is very fine to lower fine grained quartz sand, green grains, and minor argillaceous fine powder. Few chips **Calcite** and **Anhydrite Frac Fill**; white; loose and attached to marlstone. No show.
3200' – 3300'	40 – 20% **Siltstone**; medium to light gray; part very fine grained sandy, some argillaceous; moderately to very calcareous, most chips remain intact in acid; subblocky. 30 - 60% **Marlstone**; medium to medium dark gray, part tinted olive gray; smooth to silty; firm to medium hard; moderately to very calcareous, chips disintegrate in acid leaving mix of argillaceous powder, shaly flakes and silty chunks; subblocky, some platy. 20 – 30% **Sandstone**; medium to medium light gray; very fine to some lower fine grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately to very calcareous, most chips stay intact in acid; moderately clean to silty and argillaceous; trace pale green grains and brown-gold biotite; rare lower fine grained ooliths set in sand matrix; no porosity visible. Few chips **Calcite** and **Anhydrite Frac Fill**; white; loose and attached to marlstone. No show.
3300' – 3400'	60 – 70% **Marlstone**; medium to medium dark gray, part tinted olive gray; smooth to silty; firm to medium hard; moderately to very calcareous, chips disintegrate in acid leaving mix of some argillaceous powder and numerous shaly flakes and silty chunks; subblocky, platy. 30 – 20% **Siltstone**; mostly medium light gray; part very fine grained sandy, some argillaceous; moderately to very calcareous, most chips remain intact in acid; subblocky. 10% **Sandstone**; medium to light gray; very fine to some lower fine grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately to very calcareous, most chips stay intact in acid; moderately clean to silty and argillaceous; trace pale green grains and brown-gold biotite; no porosity visible. Few chips **Calcite** and **Anhydrite**; white, trace tinted moderate orange pink; probable frac fill, loose and attached to marlstone. No show.
3400' – 3500'	30 – 50% **Marlstone**; medium to medium dark gray, part tinted olive gray; smooth to silty; firm to medium hard; moderately to very calcareous, chips disintegrate in acid leaving mix of some argillaceous powder and numerous shaly flakes and silty chunks; subblocky, platy. Grades to 20 – 40% **Limy Shale**; medium to medium dark gray; not distinguished from marlstone until chips are seen to remain intact in acid. 20 – 50% **Siltstone**; mostly medium light gray; part very fine grained sandy, some argillaceous; moderately to very calcareous, most chips remain intact in acid; some not distinguished from marlstone until acid reveals silt and chips are seen to stay intact in acid; subblocky. Trace – 10% **Sandstone**; medium to light gray, trace tinted greenish gray; very fine to some lower fine grained; firm, some medium hard; moderately to very calcareous, most chips stay intact in acid; moderately clean to silty and argillaceous; no porosity visible. Several chips **Limestone**; brownish gray; dark upper very fine to lower fine grained ooliths set in white microcrystalline matrix; quartz sandy; no porosity visible. Few chips **Calcite** and **Anhydrite**; white, some tinted grayish orange pink; probable frac fill, loose and attached to marlstone. No show.

LITHOLOGY AND SHOWS

3500' – 3600'

50 - 80% **Marlstone**; medium to medium dark gray (N4.5 to N4), part drab tinted olive gray to brownish gray (5YR 4/0.5 to 5Y 4/0.5); smooth, some silty; firm to medium hard; moderately to some very calcareous, chips disintegrate in acid leaving mix of argillaceous powder and numerous shaly flakes and silty chunks; subblocky, platy. Grades to Trace to 20% **Limy Shale**; medium to medium dark gray; not distinguished from marlstone until chips are seen to remain intact in acid; appears partly dolomitic (prolonged effervescence in acid). 20 – 40% **Siltstone**; medium to medium light gray; some very fine grained sandy, part argillaceous; moderately to very calcareous, most chips remain intact in acid; some not distinguished from marlstone until acid reveals silt and chips are seen to stay intact in acid; prolonged effervescence in some chips suggests part is dolomitic; subblocky. Trace to 5% **Sandstone**; medium to medium light gray; mostly very fine grained. Few chips **Calcite** and few chips to Trace **Anhydrite**; white, light gray; probable frac fill with possible trace recovery of thin anhydrites inferred mainly from gamma and density curves (not reconciled with resistivity peaks that are offset from clean gamma). No show.

Remark:

Twin Creek top is questionable and may be as high as 3660'where samples become almost entirely highly calcareous. The marlstone still leaves substantial argillaceous, powdery HCl-insoluble residue. Please see primary Twin Creek Ls pick at 3816'.

3600' – 3700'

40 – 90% **Marlstone**; medium light to medium dark gray, part tinted olive gray; smooth, some silty; firm to medium hard; moderately to very calcareous (increasingly calcareous downhole); most chips disintegrate in acid leaving mix of argillaceous powder, shaly flakes and silty chunks (more shaly and silty uphole); subblocky, platy. Trace to 10% **Limy Shale**; medium to medium dark gray; not distinguished from marlstone until chips are seen to remain intact in acid; appears partly dolomitic (prolonged effervescence in acid). 20 – 60% **Siltstone**; medium to medium light gray; some very fine grained sandy, part argillaceous; moderately to very calcareous, most chips remain intact in acid; some not distinguished from marlstone until acid reveals silt and chips are seen to stay intact in acid; prolonged effervescence in some chips suggests part is dolomitic; subblocky. Trace to 10% **Sandstone**; medium to medium light gray; very fine grained. Few chips **Calcite** and few chips to Trace **Anhydrite**; white, light gray; probable frac fill with possible trace recovery of thin anhydrites inferred from gamma and density curves. Few chips **Silica/Chalcedony**; red-orange, orange-pink, light gray to white; possibly caving. No show.

3700' – 3800'

90 – 70% **Marlstone**; some medium to mostly medium dark gray, slightly drab tinted in part; appears smooth; firm to medium hard; moderately to very calcareous to 3740', leaves argillaceous powder and some small silty chunks in acid, prolonged effervescence in acid suggests some is dolomitic; thereafter almost all is very calcareous to 3800', leaves only argillaceous powder in acid, non-dolomitic; platy, subblocky, irregular; no porosity visible. 10 – 20% **Siltstone**; medium to medium light gray; part very fine grained sandy, some argillaceous; firm to medium hard; moderately to very calcareous, half of chips stay intact in acid; subblocky. Trace to 10% **Sandstone**; medium to light gray; very fine grained; commonly silty, some argillaceous; firm, some medium hard; moderately to very calcareous; no porosity visible. Trace **Anhydrite**; white; firm microcrystalline loose chips and thin veins, occasional soft amorphous masses; frac fill and perhaps some from thin beds indicated by gamma and density curves. Few chips to Trace **Silica/Chalcedony**;

LITHOLOGY AND SHOWS

bright red-orange, orange-pink, light gray, and white to clear—some chips show agate-like banding and full range of colors; associated with microcrystalline anhydrite patches in part. No show.

WATTON CANYON MBR.
TWIN CREEK LS. SAMPLE TOP: 3816' LOG: 3812' TVD: 3219' DATUM: +3263'

3800' – 3900' 80 – 50 – 80 – 60 – 10% **Marlstone**; some medium to mostly medium dark gray, commonly drab tinted; appears smooth, minor silty streaks revealed after reaction in acid in part; medium hard; very calcareous, leaves argillaceous powder and silty chunks in minor part, uphole some may be dolomitic. 0 – 20 – 20 – 20 – 20 – 80% **Limestone**; uphole minor medium light gray to mostly medium to medium dark gray, downhole brownish gray becoming yellowish brown; cryptocrystalline; increasingly hard downhole; cleaner downhole, decreasing argillaceous powdery residue in acid; dense, no porosity visible. Trace to 30% **Siltstone**; medium light gray to faintly light olive gray; part very fine grained sandy; moderately calcareous, most chips remain intact in acid. Trace to 10% **Sandstone**; medium to medium light gray; very fine grained; moderately to very calcareous; no porosity visible. Few chips **Anhydrite** and few chips to Trace **Calcite**; white; probable fracture fill—loose, attached to, and cutting thru marlstone and limestone. Only uphole, Trace **Silica/Chalcedony**; red-orange to orange-pink with lesser light gray to white. No substantial show, only faint nonstreaming bluish yellow cut fluorescence.

3900' – 4000' 80 – 100% **Limestone**; yellowish brown (10YR 5/2), some tinted brownish gray, some faintly light brownish gray (5YR 7/0.5); cryptocrystalline and hard where yellowish brown, slightly chalky and firm where light brownish gray; clean, leaves slight yellowish brown argillaceous powder in acid; occasional chips cut by white calcite fracture fill, few chips with attached white vein calcite; no porosity visible. 0 – 10% **Marlstone**; medium dark gray; medium hard; moderately to very calcareous, leaves brownish gray argillaceous powder and some small shaly to silty flakes in acid. Trace to 20% gradational **Sandstone/Siltstone**; medium light to light gray, faintly drab tinted (10YR 7/0.5); very fine grained quartz sand and silt; medium hard; slightly calcareous, moderately dolomitic—minor silt-size staining in Alizarin Red, dolomite cement shown by prolonged effervescence and chips damp with Alizarin Red turning light purple when exposed to air; no porosity visible. No substantial show, only faint nonstreaming bluish yellow cut fluorescence.

Remark: Samples are trashy following short trip at 4010' due to increased drag and after trip for PDC bit at 4071'. Interpretive lithology for 4000' – 4100' is based more on wireline logs than usual.

4000' – 4100' **Limestone**; yellowish brown (10YR 5/2), some tinted brownish gray, some faintly light brownish gray (5 YR 7/0.5); cryptocrystalline and hard where yellowish brown, slightly chalky and firm where light brownish gray; clean, leaves slight yellowish brown argillaceous powder in acid; occasional chips cut by white calcite fracture fill,

LITHOLOGY AND SHOWS

few chips with attached white vein calcite; no porosity visible. Several beds of **Marlstone**; medium dark gray; medium hard; moderately to very calcareous, leaves brownish gray argillaceous powder and some small shaly to silty flakes in acid. No substantial show, only faint nonstreaming bluish yellow cut fluorescence.

4100' – 4174' **Limestone**; yellowish brown (10YR 5/2), some tinted brownish gray, some faintly light brownish gray (5YR 7/0.5); cryptocrystalline and hard where yellowish brown, slightly chalky and firm where light brownish gray; clean, leaves slight yellowish brown argillaceous powder in acid; no porosity visible. **Marlstone**; brownish gray to medium dark gray; medium hard to hard; moderately to very calcareous, leaves brownish gray argillaceous powder and some shaly to silty flakes in acid; partly dolomitic; subblocky. Lesser **Limy Shale**; medium dark gray; calcareous, partly dolomitic; chips mostly remain intact in acid, shedding some flakes and argillaceous powder. No substantial show, only faint nonstreaming bluish yellow cut fluorescence.

4174' – 4230' No to Trace **Anhydrite**; white micro-crystalline patches commonly in contact with brownish gray to yellowish brown mix of limestone and dolomite as shown by staining in Alizarin Red.

Remarks: The 56-ft thick anhydrite is virtually absent in samples but is clearly shown on all curves of the wireline logs. Slightly slower drilling in the lower half of the anhydrite was used to tie wireline logs to rig depths.

A thick anhydrite at the offsetting Union Oil Federal 1-J9 is well represented *in samples* as well as on wireline logs. Roughly 13 miles to the north, at the Billy's Mountain road-cut on US Hwy 6, anhydrite is present immediately above the Boundary Ridge Mbr redbeds.

BOUNDARY RIDGE MBR. SAMPLE TOP: 4230' LOG: 4226'' TVD: 3529' DATUM: +2953'

4230' – 4250' 20% **Redbeds**: **Siltstone**; pale reddish brown where less argillaceous and partly anhydritic; dusky brown/dark reddish brown where more shaly; moderately calcareous/dolomitic; some very fine grained sandstone stringers; subblocky, rounded. No show.

RICH & SLIDE ROCK MBRS. UNDIV. SAMPLE TOP: 4250' LOG: 4246' TVD: 3544' DATUM: +2938'

4250' – 4328' 70 – 90% **Limestone**; brownish gray, some pale yellowish brown to much dark yellowish brown, minor light gray to light brownish gray; cryptocrystalline and hard except for slightly chalky and firm light gray/light brownish gray; clean, leaves minor

LITHOLOGY AND SHOWS

argillaceous powder in acid; dense, no porosity visible. No substantial show, only faint slow nonstreaming bluish yellow cut fluorescence that dries to very faint yellow fluorescent halo.

Remark: Logging geologists started 30-ft samples at 4300' due to continued rapid drilling with PDC bit.

4328' – 4343' **Limestone**; mottled/spotted pale yellowish brown, brownish gray, and lesser white; upper fine to upper medium grained oolitic packstone/grainstone; quite clean, minor very fine to lower fine grained sand/silica and trace black irregular flecks in insoluble residue; 90% staining in Alizarin Red, some prolonged effervescence along with incomplete staining in Alizarin Red indicates minor microcrystalline dolomite lining pores and minor dolomitized ooliths; rare micro-pyrite; several styolites, apparently slickensided at 4332' wireline depth; fair visible porosity in bottom core at 4337.5' wireline depth; otherwise good to excellent vuggy and partly oomoldic porosity.

Show: Medium bright uniform yellow mineral fluorescence. No oil stain. Overall slight cut fluorescence was slow, nonstreaming bluish yellow and dried to trace to weak bluish yellow fluorescent halos.

Remarks: Sidewall cores were taken at wireline depths 4326', 4327', 4328', 4329', 4330', 4331', 4332', 4333', 4334', 4335', 4336', and 4337.5' to investigate porosity zone shown on logs. Description for interval is based on the sidewall cores; the porosity zone was virtually unrepresented in cuttings.

4343' – 4420' 90% **Limestone**; brownish gray to yellowish brown with numerous pinkish gray (buff) paper thin chalky surfaces; cryptocrystalline; hard, dense; leaves minor argillaceous powder and some partly silty small flakes in acid; no porosity visible. Few chips of **Anhydrite** and **Calcite**; white; probable frac fill; two thin beds of anhydrite inferred from logs. No substantial show; "pinch" samples yields only faint slow nonstreaming bluish yellow cut fluorescence that dries to weak bluish yellow fluorescent halos.

4420' – 4444' 20% **Limy Shale**; medium dark to dark gray; moderately calcareous, dolomitic; chips mostly remain intact in acid, minor flaking; subblocky. 10% **Siltstone**; medium light gray; moderately to very calcareous, staining shows minor dolomite, most chips remain intact in acid. 70% **Limestone**. No show.

4444' – 4580' 70 – 50% **Limestone**; lesser yellowish brown and brownish gray uphole, grades to mostly medium dark gray downhole; cryptocrystalline; hard to medium hard; difficult to distinguish relatively clean limestone from limy shale until chips are placed in acid; no porosity visible. 20 – 50% **Limy Shale**; medium dark gray; smooth; medium hard to hard; moderately to very calcareous, chips remain intact or flake apart; coarse platy, subblocky. Few chips **Calcite** and **Anhydrite**; white; loose and attached to limestone and limy shale; probable frac fill. No significant show, only faint slow nonstreaming bluish yellow cut fluorescence in part.

LITHOLOGY AND SHOWS

4580' – 4652' — 80% **Limy Shale**; medium dark gray with light gray paper thin surfaces common; moderately smooth; medium hard; moderately to very calcareous, chips flake apart in acid but shed little argillaceous powder; coarse platy, subblocky. 20% **Limestone**; medium dark gray, some tinted brownish gray; cryptocrystalline. No show.

GYPSUM SPRING MBR. — SAMPLE TOP: 4652' LOG: 4648' TVD: 3849' DATUM: +2633'

4652' – 4700' — **Dolomite**; some pale to mostly dark yellowish brown with minor medium dark gray patches; micro- to very fine crystalline, faint upper fine to lower medium grained peloidal texture; firm but very small cuttings (lower coarse to upper medium sand-size chips); clean, very slight yellowish brown powdery insoluble residue with few upper fine quartz grains; trace minute irregular black flecks in residue; no to trace small vug porosity (better porosity could easily be missed with such small cuttings). Trace **Shale**; grayish red. Virtually no show.

Lost Circulation: Started losing mud (partial returns) at 4648'. Shut down and mixed LCM and mud at 4678'. Lost approximately 120 B in first 1 1/2 hrs. Loss zone may be vuggy dolomite. In much larger cuttings, numerous vugs were found at the Union Oil Federal 1-J9 in similar dolomite in the Gypsum Spring Mbr. of the Twin Creek Ls.

Crushed Limestone LCM; pinkish gray to much moderate orange pink; cryptocrystalline; clean; dense; floods many samples below this depth.

NAVAJO SS. — SAMPLE TOP: 4700' LOG: 4696' TVD: 3886' DATUM: +2596'

Remarks: Sample quality in the Navajo Sandstone was fair to poor. Cutting size was extremely small and there was often a flood of crushed limestone LCM that could not be separated from the sandstone cuttings.

The following descriptions therefore are primarily based on the sidewall cores and secondarily on cuttings.

4700' – 4740' — Cores 14 – 16: 4700', 4705', 4728' wireline depth. 4704', 4709', 4731' rig depth.

Sandstone; white to very light gray; fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowth common, abundant glassy broken grains; well sorted; hard both to tweezers and to hammer when taking chips; silica cement, no staining in Alizarin Red; opaque pure white dispersed patches and lining in pores common, possibly microcrystalline quartz—tests negative for calcite, dolomite, and anhydrite; clean; no

LITHOLOGY AND SHOWS

to trace small patches of micro-pyrite; non-uniform porosity, completely tight streaks mixed with fair secondary porosity that is often slightly vuggy; occasional unaltered intergranular porosity associated with larger grains.

Show: No to trace faint patchy blue fluorescence. No stain. Trace slow non-streaming bluish yellow fluorescence dries to slight to trace bluish yellow fluorescent halos.

4740' – 4840' Cores 17 – 18: 4784', 4822' wireline depth. 4792', 4826' rig depth.

Sandstone; very pale orange (10YR 7/2); fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowths common, abundant glassy broken grains; well sorted; hard; silica cement; no staining in Alizarin Red; dispersed opaque white grain-size patches common, possibly microcrystalline quartz; clean; rare pale greenish gray clayey grains; non-uniform fair porosity.

Show: No to slight fluorescence. No stain. Virtually no to trace slow nonstreaming bluish yellow cut fluorescence dries to trace to slight bluish yellow fluorescent halos.

4840' – 4880' Core 19:4865' wireline. 4869' rig depth.

Sandstone; very pale orange (10YR 7/2); fine to increased medium grained; subround, round; well sorted; medium hard; silica cement; decreased quartz overgrowths and fewer glassy broken grains; dispersed opaque white grain-size patches and intergranular fill, possibly microcrystalline quartz; clean; fair+ visible porosity.

Show: Slight weak streaky bluish yellow cut fluorescence. No stain. Trace slow nonstreaming bluish yellow cut fluorescence dries to trace bluish yellow fluorescent halo.

4880' – 4980' Cores 20, 21: 4905', 4955' wireline depth. 4909', 4959' rig depth

Sandstone; very pale orange (10YR 7/2); upper very fine to fine grained, few lower medium round grains; subangular, subround; well sorted; hard; silica cement, faceted grains due to quartz overgrowth common, abundant glassy broken grains; dispersed white opaque grain-size patches and intergranular fill, possibly microcrystalline quartz; clean; faint medium dark gray lamination; trace micro-pyrite; fair visible porosity.

Show: No fluorescence. No stain. No cut fluorescence; solvent dries to no to trace bluish yellow fluorescent halos.

LITHOLOGY AND SHOWS

4980' – 5220'	Cores 22, 23, 24: 5012', 5076', 5194.5' wireline depth. 5016', 5080', 5198.5' rig. **Sandstone**; mostly tinted moderate orange pink (5YR 7/4); upper very fine to fine grained, few lower medium round grains particularly at 5194.5'; subangular, subround; well sorted; hard; silica cement, faceted grains due to quartz overgrowth common, abundant glassy broken grains; dispersed white opaque grain-size patches and intergranular fill, possibly microcrystalline quartz; clean; faint medium dark gray lamination; trace micro-pyrite; fair visible porosity.
Show:	No fluorescence. No stain. No cut fluorescence; solvent dries to no to trace bluish yellow fluorescent halos.
5220' – 5383' TD	**Sandstone**; moderate orange pink (5YR 7/4) becoming partly pale reddish brown (10R 5/4) downhole; upper very fine to fine grained clusters; subangular, subround; overall well sorted; occasional loose and attached medium to lower coarse orange-stained round grains; firm (but clusters are extremely small); silica cement, faceted grains due to quartz overgrowth common; some dispersed white opaque grain-size patches and intergranular fill may be microcrystalline quartz; part slightly dolomitic downhole; fairly clean; no to slight visible porosity (but better porosity could easily be missed with such small cuttings. Virtually no show.

SIDEWALL CORE SHOW EVALUATION

Core	Depth	Fluorescence				Oil Stain				Cut Fluorescence				Fluorescent Halo	
		Overall	Intensity	Distribution	Color	Overall	Intensity	Distribution	Color	Overall	Speed	Streaming	Color	Intensity	Color
Twin Creek															
1	3828.5	None				None				None				None	
2	3929.5	None				None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
Twin Creek Porosity															
3	4326.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
4	4327.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
5	4328.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
6	4329.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
7	4330.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
8	4331.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
9	4332.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
10	4333.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
11	4334.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
12	4335.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
13	4336.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
Navajo Ss															
14	4700.0	Trace	Faint	Patchy	Blue	None				Trace	Slow	No	Blue-Yel	Slight	Blue-Yel
15	4705.0	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
16	4728.0	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
17	4784.0	None				None				None				Trace	Blue-Yel
18	4822.0	Slight	Weak	Streaks	Blue-Yellow	None				Trace	Slow	No	Blue-Yel	Slight	Blue-Yel
19	4865.0	Slight	Weak	Streaks	Blue-Yellow	None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
20	4905.0	None				None				None				Trace	Blue-Yel
21	4955.0	None				None				None				Trace	Blue-Yel
22	5012.0	None				None				None				None	
23	5076.0	None				None				None				None	
24	5194.5	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
Gypsum Spring Mbr of Twin Creek--Loss Zone															
25	4656.0	None				None				Trace	Very Slow	No	Blue-Yel	Trace	Blue-Yel

Anschutz Exploration Corporation
Hjorth Canyon Unit 13-16

SIDEWALL CORE SHOW EVALUATION

Core	Depth	Fluorescence				Oil Stain				Cut Fluorescence				Fluorescent Halo	
		Overall	Intensity	Distribution	Color	Overall	Intensity	Distribution	Color	Overall	Speed	Streaming	Color	Intensity	Color
Complimentary Core--Twin Creek Porosity															
26	4337.5	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel

SIDEWALL CORE DESCRIPTIONS

Schlumberger cut 26 sidewall cores with a wireline rotary coring tool on 22 July 2008. Cores were recovered for each core attempted and overall quality of the cores was good. Core depths are wireline log depths. (Wireline depth + 4 ft = rig depth.)

After the cores were wiped clean, the whole cores were examined for external fluorescence with a handheld UV light in the coring truck darkroom. No significant hydrocarbon fluorescence was found. External spotty yellow fluorescence in the Twin Creek porosity zone 4326' – 4337' was later determined to be uniform yellow mineral fluorescence on fresh breaks.

No hydrocarbon odor was detected. A slight odor of possible sulfur was noted in the Navajo and in the Twin Creek porosity zones. When jars containing core chips were reopened the odor seemed more like the somewhat unpleasant smell of the drilling mud than H2S or related sulfur compounds.

The cores did not bleed oil or gas. The core specialist noted that core 13 broke or was about to break into multiple disks similar to those he often sees when coring tight gas sands. He referred to these as "gas fractures".

Fresh breaks of the cores felt cool to the cheek, suggestive of water.

Small chips of the cores were then taken from each core for examination on site. The whole cores were then wrapped in Saran Wrap and foil and placed in glass jars. The jar lids were sealed with wax. The cores were sent by FedEx to Omni Labs in Denver.

The small fresh core chips were examined for fluorescence and stain with a Corvascope (combination UV box/microscope). A chip from each core was then cut with trichloroethylene and examined under UV light. Results for fluorescence, stain, cut fluorescence, and fluorescent halo are described below and also tabulated in a spreadsheet in this report. Under white light, there were no cuts or oil rings visible.

Visual porosity was rated with a research-grade Zeiss 10-100X microscope.

WATTON CANYON MBR.
TWIN CREEK LS.

Core 1 3828.5'

Marlstone; brownish gray; cryptocrystalline limestone appearance; calcareous, chips disintegrate in acid to brownish gray argillaceous flakes and to lesser light gray flakes with silty appearance; stains in Alizarin Red except for dark laminae; dense, no porosity visible; numerous dark gray laminae in whole core. No show.

Core 2 3929.5'

Limestone; pale yellowish brown; cryptocrystalline; minor brownish gray argillaceous/silty and light gray very fine grained sandy insoluble residue; stains in

SIDEWALL CORE DESCRIPTIONS

Alizarin Red; dense, no porosity visible; several 0.5 to 1.0 mm filled fractures cutting whole core.

Show: No fluorescence. No stain. Slight cut fluorescence was slow nonstreaming bluish yellow, drying to trace bluish yellow fluorescent halo.

RICH MBR.
TWIN CREEK LS.

Cores 3 – 13, 26: 4326', 4327', 4328', 4329', 4330', 4331', 4332', 4333', 4334', 4335', 4336', 4337.5'

Limestone; mottled/spotted pale yellowish brown, brownish gray, and lesser white; upper fine to upper medium grained oolitic packstone/grainstone; quite clean, minor very fine to lower fine grained sand/silica and trace black irregular flecks in insoluble residue; 90% staining in Alizarin Red, some prolonged effervescence along with incomplete staining in Alizarin Red indicates minor microcrystalline dolomite lining pores and minor dolomitized ooliths; rare micro-pyrite; several styolites, apparently slickensided at 4332'; fair visible porosity in bottom core at 4337.5', otherwise good to excellent vuggy and partly oomoldic porosity.

Show: Medium bright uniform yellow mineral fluorescence. No oil stain. Overall slight cut fluorescence was slow, nonstreaming bluish yellow and dried to trace to weak bluish yellow fluorescent halos.

GYPSUM SPRING MBR.
TWIN CREEK LS.

Core 25: 4656.5'

Siltstone/Sandstone; light brownish gray; silt to very fine grained sand; firm; dolomitic, no staining in Alizarin Red; partly argillaceous, tests negative for anhydrite; slight vuggy porosity.

Show: No fluorescence. No stain. Trace very slow nonstreaming bluish yellow cut fluorescence dries to trace bluish yellow fluorescent halo.

SIDEWALL CORE DESCRIPTIONS

NAVAJO SS.

Cores 14 – 16	4700', 4705', 4728'
	Sandstone; white to very light gray; fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowth common, abundant glassy broken grains; well sorted; hard both to tweezers and to hammer when taking chips; silica cement, no staining in Alizarin Red; opaque pure white dispersed patches and lining in pores common, possibly microcrystalline quartz—tests negative for calcite, dolomite, and anhydrite; clean; no to trace small patches of micro-pyrite; non-uniform porosity, completely tight streaks mixed with fair secondary porosity that is often slightly vuggy; occasional unaltered intergranular porosity associated with larger grains.
Show:	No to trace faint patchy blue fluorescence. No stain. Trace slow non-streaming bluish yellow fluorescence dries to slight to trace bluish yellow fluorescent halos.
Cores 17 - 18	4784', 4822'
	Sandstone; very pale orange (10YR 7/2); fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowths common, abundant glassy broken grains; well sorted; hard; silica cement; no staining in Alizarin Red; dispersed opaque white grain-size patches common, possibly microcrystalline quartz; clean; rare pale greenish gray clayey grains; non-uniform fair porosity.
Show:	No to slight fluorescence. No stain. Virtually no to trace slow nonstreaming bluish yellow cut fluorescence dries to trace to slight bluish yellow fluorescent halos.
Core 19	4865'
	Sandstone; very pale orange (10YR 7/2); fine to increased medium grained; subround, round; well sorted; medium hard; silica cement; decreased quartz overgrowths and fewer glassy broken grains; dispersed opaque white grain size patches and intergranular fill, possibly microcrystalline quartz; clean; fair+ visible porosity.
Show:	Slight weak streaky bluish yellow cut fluorescence. No stain. Trace slow nonstreaming bluish yellow cut fluorescence dries to trace bluish yellow fluorescent halo.

SIDEWALL CORE DESCRIPTIONS

Cores 20 - 24	4905', 4955', 5012', 5076', 5194.5',
	Sandstone; very pale orange (10YR 7/2), becoming tinted moderate orange pink (5YR 7/4) downhole; upper very fine to fine grained, few lower medium round grains particularly at 5194.5'; subangular, subround; well sorted; hard; silica cement, faceted grains due to quartz overgrowth common, abundant glassy broken grains; dispersed white opaque grain-size patches and intergranular fill, possibly microcrystalline quartz; clean; faint medium dark gray lamination; trace micro-pyrite; fair visible porosity.
Show:	No fluorescence. No stain. No cut fluorescence; solvent dries to no to trace bluish yellow fluorescent halos.

SERVICES

CONTRACTOR: Toolpushers:	Frontier Drilling Rig 1 Chris O'Driscoll Billy Postma	Roosevelt, UT 435-722-3133
Drillers:	David Seddell Chet Atwood Cody Rasmussen Kurt Harmer	
SUPERVISION:	Ken Clare	Dickinson, ND 701-720-1597
DIRECTIONAL DRILLING:	Pathfinder Jesse Suek: Directional Driller Dave Carrico: Directional Driller Tari Annan: MWD Mike Hansen: MWD	Casper, WY 307-265-3145
MUD:	Newpark Drilling Fluids, LLC Alex Nobles	Denver, Colorado (303) 623-2205
H2S Safety	Inter-mountain Safety Co., Inc.	Evanston, WY (307) 789-3882
MUD LOGGING:	T. M. McCoy & Co., Inc. John Sherman Tim Tschetter	Wilson, WY 307-733-4332
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Tim McCoy	Wilson, WY (307) 733-4332
PALYNOLOGY	Waanders Palynology Gerald "Jerry" Waanders	Encinitas, CA 858-759-0180
RIG INTSTRUMENTATION:	Pason Systems	Golden, CO 720-880-2000
SKID WELLSITE UNIT:	Mountain West	Vernal, UT 435-789-0872
TRAVEL TRAILER:	B&D RV Center	Vernal, UT 435-789-1970
CORES:	None	
DRILL STEM TESTS:	None	
LOGS:	Schlumberger Ryan Stewart	Vernal, UT 435-789-3394

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
0	6/27	161		14:00	8.0	Rig up rotary tools.
				20:00	6.0	Weld stand pipe.
				23:00	3.0	Weld conductor.
				6:00	7.0	Pick up directional tools.
0	6/28	161		11:00	5.0	Wait on saver sub.
				13:00	2.0	Work on flowline.
				16:00	3.0	Drill 17 1/2". Spud 1:00 PM 6/28/2008.
				17:30	1.5	Work on MWD.
				18:00	0.5	Drill 250' - 260'.
				20:30	2.5	Trip MWD. Found metal from welding standpipe.
				6:00	9.5	Drill 260' - 372'.
1	6/29	372	211	16:00	10.0	Drill 372' - 526'.
				16:30	0.5	Service rig.
				23:30	7.0	Drill 526' - 630'.
				0:30	1.0	Reprogram MWD.
				5:30	5.0	Drill 630' - 722'.
				6:00	0.5	Survey.
2	6/30	722	350	16:30	10.5	Drill 722' - 893'.
				17:00	0.5	Service rig.
				4:00	11.0	Drill 893' - 1019'.
				4:30	0.5	Change swab on pump.
				5:30	1.0	Drill 1019' - 1033'.
				6:00	0.5	Survey.
3	7/1	1033	311	9:30	3.5	Drill 1033' - 1076'.
				10:00	0.5	Service rig.
				1:00	15.0	Drill 1076' - 1210'.
				1:30	0.5	Circulate sweep.
				3:30	2.0	Wiper trip to 300'.
				4:00	0.5	Circulate sweep.
				5:30	1.5	Trip out to run 13 3/8" surface casing.
				6:00	0.5	Lay down MWD.
4	7/2	1210	177	7:00	1.0	Lay down directional tools.
				7:30	0.5	Safety meeting.
				8:00	0.5	Rig up casers.
				15:30	7.5	Run casing.
				19:00	3.5	Wait on welder to weld casing.
				20:00	1.0	Run casing.
				22:00	2.0	Rig up BJ. Circulate casing.
				0:30	2.5	Cement.
				6:00	5.5	Wait on cement. Nipple up.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
5	7/3	1210	0	9:00	3.0	Cut off casing. Weld on head.
				16:00	7.0	Nipple up BOPs.
				18:30	2.5	Test BOPs.
				0:00	5.5	No test. Work on rams & Hydril.
				5:00	5.0	Wait on Weatherford to bring new Hydril.
				6:00	1.0	Pick up new Hydril.
6	7/4	1210	0	10:00	4.0	Change out pipe and blind rams.
				12:30	2.5	Test BOPs.
				13:00	0.5	Test casing at 1500 psi for 30 min.
				14:30	1.5	Nipple up rotating head.
				17:00	2.5	Pick up directional tools. Scribe, orient.
				17:30	0.5	Service rig.
				19:00	1.5	Trip in.
				21:00	2.0	Circulate. Fix leaks.
				23:00	2.0	Drill plug, cement, and shoe.
				23:30	0.5	Drill 1210' - 1220'.
				0:00	0.5	Formation integrity test: 11# equivalent mud wt.
				6:00	6.0	Drill 1220' - 1365'.
7	7/5	1365	155	13:00	7.0	Drill 1365' - 1519'.
				13:30	0.5	Service rig.
				20:30	7.0	Drill 1519' - 1657'.
				23:30	3.0	Repair pump module.
				1:00	1.5	Drill 1657' - 1685'.
				6:00	5.0	Repair pump module.
8	7/6	1685	320	16:30	10.5	Repair pump.
				4:30	12.0	Drill 1685' - 1890'.
				5:30	1.0	Replace pump swab.
				6:00	0.5	Drill 1890' - 1895'.
9	7/7	1895	210	13:00	7.0	Drill 1895' - 1983'.
				13:30	0.5	Service rig.
				14:30	1.0	Drill 1983' - 1990'.
				16:00	1.5	Repair liner gasket, pump 1.
				21:00	5.0	Drill 1990' - 2053'.
				0:30	3.5	Repair liner gasket, pump 2.
				3:00	2.5	Drill 2053' - 2089'.
				4:30	1.5	Repair liner gasket, pump 1.
				6:00	1.5	Drill 2089' - 2108'.
10	7/8	2108	213	6:30	0.5	Survey.
				12:00	5.5	Drill 2108' - 2169'.
				12:30	0.5	Service rig.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				6:00	17.5	Drill 2169' - 2395'.
11	7/9	2395	287	12:00	6.0	Drill 2395' - 2479'.
				12:30	0.5	Service rig.
				6:00	17.5	Drill 2479' - 2770'.
12	7/10	2770	375	15:00	9.0	Drill 2770' - 2911'.
				15:30	0.5	Service rig.
				17:30	2.0	Drill 2911' - 2942'.
				18:00	0.5	Survey.
				5:00	11.0	Drill 2942' - 3104'.
				6:00	1.0	Repair pop off line.
13	7/11	3104	334	7:00	1.0	Drill 3104' - 3127'.
				7:30	0.5	Circulate.
				9:30	2.0	Wiper trip to casing.
				10:30	1.0	Wash and ream tight spot.
				11:30	1.0	Wash and ream 3050' - 3127'.
				18:00	6.5	Drill 3127' - 3201'.
				19:30	1.5	Trip out to check bit, OK.
				22:30	3.0	Repair pump.
				1:30	3.0	Trip in.
				6:00	4.5	Drill 3201' - 3243'.
14	7/12	3243	139	6:30	0.5	Pressure loss. Check pumps.
				7:00	0.5	Drill 3243' - 3250'.
				13:00	6.0	Change out seats on pump.
				14:00	1.0	Drill 3250' - 3261'.
				18:00	4.0	Trip out.
				20:30	2.5	Change out mud motor.
				22:30	2.0	Trip in.
				6:00	7.5	Change out pump module.
15	7/13	3261	18	7:00	1.0	Trip in.
				17:00	10.0	Drill 3261' - 3373'.
				17:30	0.5	Service rig.
				18:00	0.5	Survey.
				4:30	10.5	Drill 3373' - 3540'.
				5:00	0.5	Change out swab on pump.
				5:30	0.5	Survey.
				6:00	0.5	Drill 3540' - 3547'.
16	7/14	3547	286	12:30	6.5	Drill 3547' - 3640'.
				13:30	1.0	Service rig.
				17:30	4.0	Drill 3640' - 3701'.
				18:00	0.5	Survey.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				5:30	11.5	Drill 3701' - 3880'.
				6:00	0.5	Survey.
17	7/15	3880	333	8:00	2.0	Drill 3880' - 3913'.
				9:00	1.0	Service rig.
				10:00	1.0	Work on valves in pump.
				13:00	3.0	Drill 3913' - 4010'.
				15:00	2.0	Circulate and work tight hole.
				18:30	3.5	Wiper trip to casing.
				23:00	4.5	Drill 4010' - 4071'.
				0:00	1.0	Circulate sweep.
				2:00	2.0	Trip out.
				5:00	3.0	Lay down big tools (reducing hole size to 8 1/2").
				6:00	1.0	Wait on directional tools.
18	7/16	4071	191	8:30	2.5	Cut and slip drilling line.
				10:00	1.5	Make up directional tools.
				12:00	2.0	Trip in. Test MWD.
				12:30	0.5	Wash and ream 40 ft.
				17:30	5.0	Drill 4071' - 4198' with 8 1/2" PDC bit.
				18:00	0.5	Service rig.
				4:30	10.5	Drill 4198' - 4678'.
				6:00	1.5	Lost circulation, partial returns. Mix mud & LCM.
19	7/17	4678	607	8:30	2.5	Circulate. Mix mud and LCM.
				14:30	6.0	Drill 4678' - 4864'.
				15:00	0.5	Service rig.
				6:00	15.0	Drill 4864' - 5172'.
20	7/18	5172	494	16:00	10.0	Drill 5172' - 5383'.
				17:00	1.0	Repair pump.
				17:30	0.5	Service rig.
				19:00	1.5	Circulate and condition hole.
				23:00	4.0	Trip out.
				0:00	1.0	Lay down directional tools.
				3:00	3.0	Trip in.
				4:00	1.0	Repair airline.
				5:30	1.5	Trip in.
				6:00	0.5	Pick up pipe to replace directional tools.
21	7/19	5383	211	6:30	0.5	Pick up pipe. Wash to bottom.
				9:00	2.5	Circulate and condition hole for logs.
				13:30	4.5	Wiper trip to 1100'.
				15:00	1.5	Circulate and condition hole for logs.
				18:00	3.0	Trip out.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				6:00	12.0	Log with Schlumberger. Ran neutron, density, induction, and sonic logs first pass. Ran dipmeter second pass.
22	7/20	5383	0	10:00	4.0	Stuck dipmeter. Wait on fishing tools.
				12:00	2.0	Make up overshot.
				19:30	7.5	Trip in. Cut and thread to TD.
				20:00	0.5	Fish.
				21:30	1.5	Pull loose. Prepare to trip out with fish.
				22:30	1.0	Circulate.
				2:30	4.0	Trip out.
				3:30	1.0	Lay down fish and tools.
				6:00	2.5	Trip in with bit.
23	7/21	5383	0	7:00	1.0	Trip in.
				8:30	1.5	Circulate and condition.
				12:00	3.5	Trip out.
				18:00	6.0	Run dipmeter.
				20:30	2.5	Trip in.
				0:00	3.5	Circulate and condition.
				3:00	3.0	Trip out.
				4:30	1.5	Wait on Schlumberger wireline rotary coring tool.
				6:00	1.5	Cut sidewall cores.
24	7/22	5383	0	11:30	5.5	Cut sidewall cores. Pull out and rig down.
				12:30	1.0	Trip in to casing shoe.
				6:00	17.5	Wait on orders.
25	7/23	5383	0	11:00	5.0	Wait on orders.
				14:00	3.0	Prepare to P&A. Lay down drill collars & heavy weight pipe.
				17:00	3.0	Wait on cementers.
				19:30	2.5	Trip in.
				1:30	6.0	Circulate. Wait on cementers.
				2:30	1.0	Set first plug, 85 sacks at 4900'.
				3:00	0.5	Pull 10 stands.
				6:00	3.0	Wait on cement.
26	7/24	5383	0	6:30	0.5	Wait on cement.
				7:00	0.5	Tag plug at 4709'.
				8:30	1.5	Lay down pipe.
				9:30	1.0	Set second plug, 185 sacks at 3750' - 3550'.
				12:00	2.5	Lay down pipe.
				12:30	0.5	Set third plug, 180 sacks at 1300' - 1100'.
				13:30	1.0	Lay down pipe.
				14:30	1.0	Set fourth plug, 50 sacks at 60' to surface.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	3.5	Nipple down BOPs. Clean mud tanks.
				6:00	12.0	Rig down.

Anschutz Exploration Corporation
Hjorth Canyon Unit 13-16

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	H2O	Non-Aq	Sol	Sd	MBT	pH	Pm	Pf	Mf	Cl	Ca	LGS	Remarks
6/28	260	8.8	49	13	4	3/6	13.6	1	97.9	----	2.1	2.0	8.0	9.0	0.3	0.2	0.3	225	20	0.8	Spud 13:00 6/28/08
6/29	469	9.1	42	14	10	3/9	9.6	2	97.0	----	3.0	1.0	10.0	9.0	0.2	0.1	0.2	200	1	0.4	
6/30	816	9.2	46	13	20	7/11	17.0	2	96.5	----	3.5	1.0	15.0	8.5	0.2	0.05	0.1	200	40	5.9	
7/1	1102	9.3	38	5	19	16/31	N/C	3	96.0	----	4.0	1.0	18.0	9.5	0.3	0.15	0.2	200	120	0.9	
7/2	1210	9.5	33	5	12	12/23	N/C	2	95.5	----	4.5	0.5	15.0	9.5	0.3	0.15	0.2	200	120	0.4	13 3/8" csg at 1208'
7/3	1210	9.0	34	6	5	3/9	N/C	2	96.0	----	4.0	0.5	15.0	10.0	0.3	0.2	0.3	250	140	3.1	F.I.T. 11.0 ppg equiv
7/4	1210	9.0	40	7	12	9/14	N/C	2	96.0	----	4.0	0.5	15.0	10.0	0.3	0.2	0.3	250	160	3.1	
7/5	1657	9.6	39	7	7	9/25	15.0	2	95.0	----	5.0	1.0	18.0	10.5	0.6	0.4	0.6	700	160	0.6	Switch to LST-MD
7/6	1724	9.9	39	8	10	16/35	12.0	2	91.5	----	8.5	0.5	15.0	10.5	0.5	0.4	0.5	400	160	5.4	
7/7	1978	9.8	43	11	9	13/33	8.0	2	92.0	----	8.0	0.5	18.0	10.5	0.7	0.4	0.6	1050	300	5.1	
7/8	2154	10.0	42	12	8	12/36	6.8	2	91.0	----	9.0	0.75	17.5	10.5	0.7	0.3	0.5	1200	350	5.6	
7/9	2451	9.6	36	8	6	7/20	9.6	2	90.6	----	9.4	0.5	15.0	11.0	0.9	0.4	0.7	1300	120	9.4	Add water to decrs wt.
7/10	2820	9.3	40	13	9	3/12	6.0	2	92.9	----	7.1	0.5	10.0	10.5	0.8	0.3	0.6	1700	80	7.1	
7/11	3127	9.4	49	17	13	4/22	7.2	2	92.1	----	7.9	1.0	10.0	10.5	0.9	0.3	0.8	1800	80	7.9	Short trip tight at 2200'
7/12	3250	9.3	39	10	8	3/15	7.2	2	92.9	----	7.1	0.25	10.0	10.5	0.7	0.3	0.5	1800	120	7.1	
7/13	3335	9.4	39	11	6	3/17	6.8	2	92.1	----	7.9	0.25	10.0	10.5	0.7	0.3	0.6	1800	80	7.9	Trip at 3261' OK
7/14	3592	9.5	40	10	8	5/26	6.8	2	91.4	----	8.6	0.25	15.0	10.5	0.6	0.2	0.6	1800	120	8.6	
7/15	3996	9.4	51	14	14	13/35	7.6	3	92.1	----	7.9	0.25	15.0	10.5	0.7	0.3	0.6	1600	120	7.9	Short trip due to drag
7/16	4071	9.3	40	11	8	7/28	8.2	2	92.8	----	7.2	0.25	18.0	10.5	0.7	0.3	0.6	1400	160	7.2	
7/17	4940	9.3	58	19	12	4/31	7.2	2	92.8	----	7.2	1.0	15.0	10.5	0.7	0.3	0.6	1400	160	7.2	Partial returns at 4648'
7/18	5340	9.4	51	19	15	5/26	----	2	92.1	----	7.9	1.0	12.0	11.0	0.9	0.4	0.8	1400	160	7.9	Some seepage
7/19	5383	9.5	39	11	11	3/15	7.6	2	91.3	----	8.7	0.5	12.0	10.5	0.9	0.4	0.8	1400	120	8.7	Log
7/20	5383	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	Fish stuck dipmeter
7/21	5383	9.5	44	11	12	4/23	7.2	2	91.3	----	8.7	0.75	----	10.5	0.8	0.3	0.7	1400	160	8.7	Rerun dipmeter
7/22	5383	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	Rotary sidewall cores
7/23																					Wait on orders in csg.

Anschutz Exploration Corporation
Hjorth Canyon Unit 13-16

MUD RECORD

ABBREVIATIONS & UNITS

Weight (Wt)	lbs/gal
Viscosity (Vis)	sec/qt
Plastic Viscosity (PV)	centipoise
Yield Point (YP)	lbs/100 sq ft
Gel Strengths (Gels)	lbs/100 sq ft (10 sec / 10 min)
Filtrate (FL)	ml/30 min
Cake	32nds inch
Water Content (H2O)	% by volume
Deep Drill Inhibitor (Non-Aq)	% by volume
Solids (Sol)	% by volume
Sand (Sd)	% by volume
Bentonite equivalent (MBT)	lbs/bbl
pH	
Pm	ml of N-50 H2SO4
Alkalinity (Pf, Mf)	ml of N-50 H2SO4
Chlorides (Cl)	mg/l
Calcium (Ca)	mg/l
Low gravity solids 2.6sg (LGS)	% by volume

BIT RECORD

Run	Bit	Size	Make	Type	Depth	Ft	Hrs	Ft/Hr	Noz. 32nds	WOB	RPM		Pump	Pump	Inner	Outer	Dull	Brng	Gage	Other	Reason
					Out	Cut					Table	Motor	Press	SPM	Row	Row	Char	Seals	32nds	Char	Pulled
1	1	17 1/2	Smith	F2	1210	1047	76.0	13.8	(4) 20s	35	45	60	1500	220	3	3	WT	E	I	NO	TD
2	2	12 1/4	Smith	GF15B	4071	2861	186.0	15.4	(3) 18s	45	50	63	1900	220	3	3	BT	E	I	NO	TD
3	3	8 1/2	Hughes	HC506ZX	5383	1312	46.5	28.2	(6) 16s	15	45	174	1800	216	0	1	BT	x	I	NO	TD
4	4	8 1/2	Smith	Mill Tooth	5383	0	N/A	N/A	(3) 20s	N/A	N/A	0	1600	220	N/A	N/A	N/A	N/A	N/A	N/A	TD

WELL SURVEY

MD ft	INC deg	AZ deg	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100ft
PATHFINDER MWD SURVEYS						
0	0.00	0.00	0.00	0.00 N	0.00 E	---
190	0.70	269.19	190.00	0.02 S	1.16 W	0.37
250	1.14	253.46	249.99	0.19 S	2.10 W	0.84
281	1.67	234.91	280.98	0.54 S	2.76 W	2.23
311	1.49	244.41	310.97	0.96 S	3.47 W	1.06
343	1.32	240.19	342.96	1.32 S	4.17 W	0.62
373	2.02	244.59	372.94	1.72 S	4.95 W	2.37
404	1.76	231.75	403.93	2.25 S	5.81 W	1.60
435	1.06	226.74	434.92	2.74 S	6.40 W	2.29
466	0.44	198.70	465.92	3.05 S	6.64 W	2.27
497	0.53	106.59	496.91	3.20 S	6.54 W	2.26
528	2.02	88.93	527.91	3.23 S	5.86 W	4.91
558	3.61	87.26	557.87	3.18 S	4.39 W	5.31
589	4.75	85.15	588.79	3.02 S	2.13 W	3.71
620	5.72	82.07	619.66	2.70 S	0.67 E	3.26
650	6.68	78.29	649.48	2.14 S	3.86 E	3.48
681	7.30	73.02	680.25	1.20 S	7.51 E	2.88
711	7.83	68.36	709.99	0.11 N	11.24 E	2.70
742	8.27	63.97	740.68	1.87 N	15.20 E	2.44
772	9.15	66.43	770.34	3.77 N	19.33 E	3.18
803	9.67	67.66	800.92	5.74 N	23.99 E	1.80
833	9.58	66.60	830.50	7.69 N	28.62 E	0.66
863	10.02	67.57	860.06	9.68 N	33.32 E	1.57
894	11.26	67.31	890.53	11.88 N	38.60 E	4.00
925	12.66	66.87	920.85	14.38 N	44.52 E	4.53
955	14.07	66.34	950.04	17.13 N	50.88 E	4.72
985	15.12	66.60	979.07	20.15 N	57.82 E	3.51
1016	15.92	68.98	1008.94	23.28 N	65.50 E	3.30
1046	16.80	69.68	1037.73	26.26 N	73.40 E	3.01
1077	18.38	70.74	1067.28	29.43 N	82.22 E	5.20
1108	20.49	69.42	1096.51	32.95 N	91.91 E	6.95
1139	22.25	69.24	1125.38	36.94 N	102.48 E	5.68
1233	25.06	69.94	1211.47	50.08 N	137.83 E	3.00
1263	25.94	69.94	1238.55	54.51 N	149.96 E	2.93
1295	26.82	69.50	1267.21	59.44 N	163.30 E	2.82
1326	27.61	69.15	1294.78	64.44 N	176.56 E	2.60
1357	28.49	68.98	1322.14	69.65 N	190.18 E	2.85
1388	29.35	68.67	1349.27	75.07 N	204.15 E	2.82
1419	30.16	69.09	1376.19	80.61 N	218.51 E	2.70
1449	31.02	69.23	1402.01	86.04 N	232.77 E	2.88
1480	31.96	69.43	1428.45	91.76 N	247.92 E	3.05
1511	32.68	69.26	1454.64	97.60 N	263.43 E	2.34
1542	33.26	70.02	1480.65	103.47 N	279.25 E	2.30

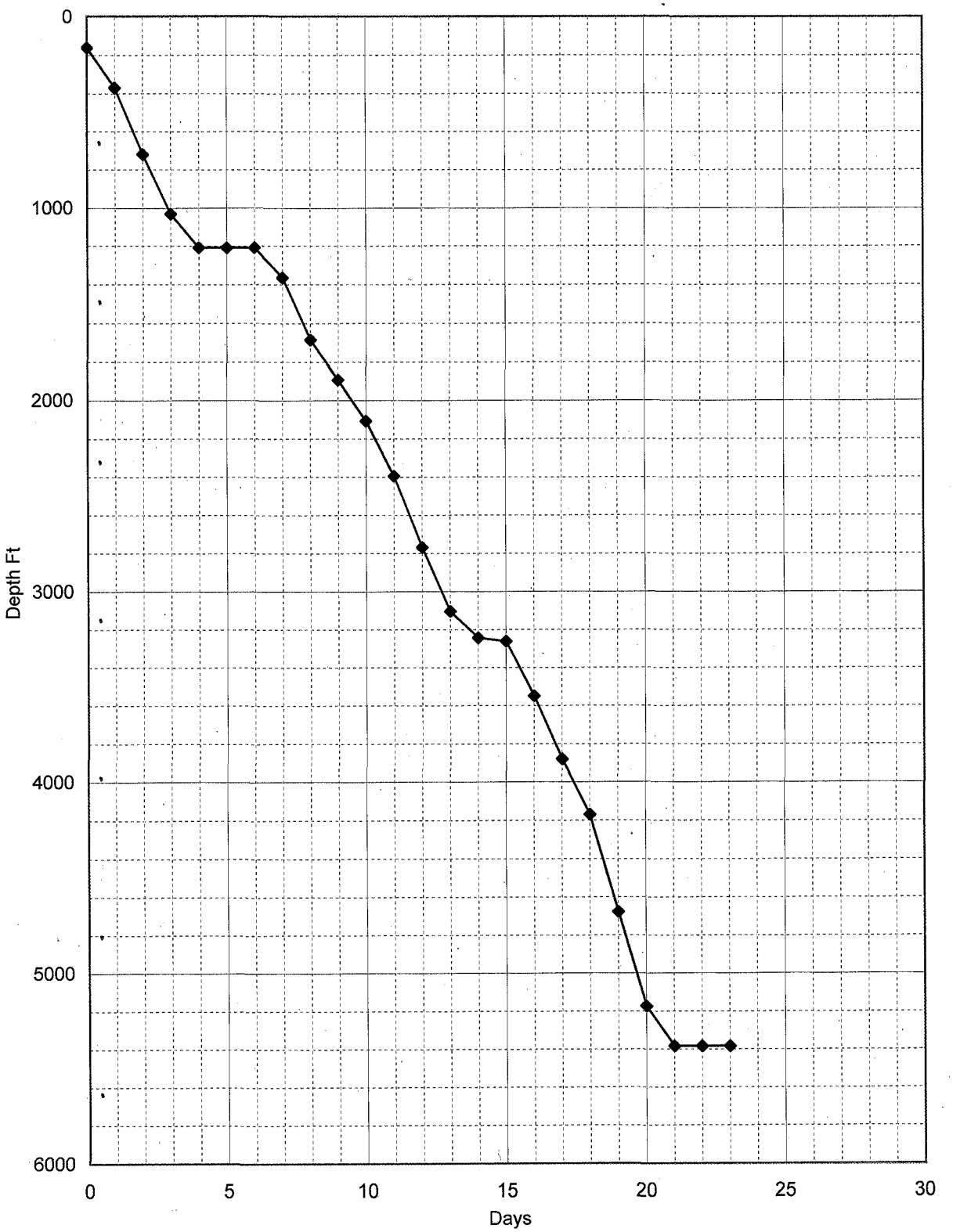
WELL SURVEY

MD ft	INC deg	AZ deg	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100ft
1573	33.65	71.83	1506.52	109.05 N	295.40 E	3.46
1604	34.06	72.65	1532.26	114.32 N	311.85 E	1.98
1634	34.84	72.98	1557.00	119.33 N	328.06 E	2.67
1665	35.94	73.19	1582.27	124.56 N	345.23 E	3.57
1696	36.92	74.01	1607.21	129.75 N	362.89 E	3.53
1727	37.77	74.52	1631.86	134.85 N	381.00 E	2.92
1758	38.46	74.14	1656.25	140.02 N	399.42 E	2.35
1789	38.75	74.32	1680.47	145.28 N	418.03 E	1.00
1820	38.91	74.24	1704.62	150.54 N	436.74 E	0.54
1851	38.84	74.16	1728.75	155.84 N	455.46 E	0.28
1882	39.10	74.42	1752.86	161.12 N	474.23 E	0.99
1913	39.56	74.38	1776.84	166.40 N	493.16 E	1.49
1944	40.00	74.17	1800.66	171.78 N	512.25 E	1.48
2007	40.57	74.30	1848.72	182.85 N	551.45 E	0.91
2068	40.10	74.72	1895.22	193.39 N	589.50 E	0.89
2130	39.21	74.57	1942.95	203.87 N	627.65 E	1.44
2192	37.86	73.22	1991.45	214.58 N	664.76 E	2.57
2254	37.22	71.79	2040.61	225.93 N	700.79 E	1.74
2316	36.52	71.33	2090.21	237.69 N	736.08 E	1.21
2378	36.27	71.60	2140.12	249.39 N	770.96 E	0.48
2440	37.12	73.67	2189.83	260.44 N	806.32 E	2.42
2502	38.57	76.04	2238.79	270.36 N	843.03 E	3.31
2564	39.88	75.90	2286.82	279.87 N	881.07 E	2.12
2625	41.04	75.96	2333.23	289.49 N	919.46 E	1.90
2688	41.17	76.49	2380.70	299.35 N	959.69 E	0.59
2750	41.09	77.53	2427.40	308.52 N	999.43 E	1.11
2811	41.78	76.38	2473.14	317.63 N	1038.75 E	1.68
2872	42.13	75.67	2518.50	327.48 N	1078.32 E	0.97
2934	41.70	75.37	2564.64	337.84 N	1118.43 E	0.77
2996	41.66	75.00	2610.94	348.38 N	1158.28 E	0.40
3057	42.30	74.91	2656.29	358.97 N	1197.69 E	1.05
3119	42.17	74.34	2702.19	370.02 N	1237.87 E	0.65
3180	41.33	71.27	2747.71	382.02 N	1276.66 E	3.62
3259	40.90	69.32	2807.23	399.53 N	1325.57 E	1.71
3321	40.67	68.24	2854.17	414.18 N	1363.32 E	1.20
3383	41.40	68.23	2900.94	429.28 N	1401.12 E	1.18
3446	41.90	67.89	2948.01	444.92 N	1439.96 E	0.87
3507	41.61	68.19	2993.52	460.11 N	1477.63 E	0.58
3570	41.82	69.91	3040.55	475.10 N	1516.78 E	1.85
3631	42.31	69.62	3085.83	489.24 N	1555.13 E	0.86
3693	42.61	69.18	3131.57	503.96 N	1594.30 E	0.68
3755	42.52	70.22	3177.24	518.51 N	1633.64 E	1.14
3817	42.10	71.16	3223.09	532.31 N	1673.02 E	1.22
3879	41.97	72.44	3269.14	545.28 N	1712.46 E	1.40
3940	41.63	72.31	3314.61	557.59 N	1751.21 E	0.58

WELL SURVEY

MD ft	INC deg	AZ deg	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100ft
4002	41.15	72.15	3361.13	570.10 N	1790.24 E	0.79
4062	40.71	70.96	3406.46	582.54 N	1827.53 E	1.49
4124	41.68	69.19	3453.11	596.46 N	1865.92 E	2.45
4186	41.50	68.86	3499.48	611.19 N	1904.35 E	0.46
4247	41.59	68.42	3545.14	625.92 N	1942.02 E	0.50
4309	41.86	67.80	3591.41	641.31 N	1980.31 E	0.80
4371	42.03	66.78	3637.53	657.31 N	2018.54 E	1.13
4433	40.98	65.10	3683.96	674.05 N	2056.05 E	2.47
4494	40.54	63.87	3730.16	691.20 N	2092.00 E	1.50
4555	39.66	65.46	3776.83	708.02 N	2127.50 E	2.21
4616	39.39	65.54	3823.88	724.12 N	2162.83 E	0.45
4678	39.57	66.12	3871.73	740.26 N	2198.79 E	0.66
4740	40.10	66.18	3919.34	756.32 N	2235.12 E	0.86
4802	40.10	66.77	3966.77	772.26 N	2271.73 E	0.61
4863	40.27	66.83	4013.37	787.76 N	2307.91 E	0.29
4925	40.27	66.44	4060.67	803.66 N	2344.70 E	0.41
4987	40.10	66.81	4108.04	819.53 N	2381.42 E	0.47
5049	40.10	66.59	4155.47	835.33 N	2418.10 E	0.23
5110	39.92	66.30	4202.19	851.00 N	2454.05 E	0.42
5173	40.01	65.83	4250.47	867.42 N	2491.04 E	0.50
5234	39.66	65.92	4297.31	883.39 N	2526.70 E	0.58
5297	39.92	65.93	4345.72	899.83 N	2563.51 E	0.41
STRAIGHT LINE PROJECTION FROM 5297' TO RIG TD 5383'						
5383	39.92	65.93	4411.69	922.34 N	2613.87 E	0.00

DRILLING CURVE



P&A

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

AMENDED REPORT ☐ (highlight changes)

FORM 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

1a. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ DRY ☐ OTHER

7. UNIT or CA AGREEMENT NAME

b. TYPE OF WORK: NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER

8. WELL NAME and NUMBER: Hjorth Canyon Unit 13-16

2. NAME OF OPERATOR: Anschutz Exploration Corporation

9. API NUMBER: 4304930021

3. ADDRESS OF OPERATOR: 555 17th St., Ste 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10 FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 225' FSL 527' FWL Per HSM Review
AT TOP PRODUCING INTERVAL REPORTED BELOW:
AT TOTAL DEPTH: 1147 FSL 1693 FEL

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 16 11S 4E

12. COUNTY: Utah

13. STATE: UTAH

14. DATE SPUDDED: 6/29/2008

15. DATE T.D. REACHED: 7/20/2008

16. DATE COMPLETED: 7/25/2008 ABANDONED ☑ READY TO PRODUCE ☐

17. ELEVATIONS (DF, RKB, RT, GL): 6470' GL

18. TOTAL DEPTH: MD 5,383 TVD 4,431 4412

19. PLUG BACK T.D.: MD P&A TVD

20. IF MULTIPLE COMPLETIONS, HOW MANY? *

21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
mud, CN, Pex, TD, LD, GR, AIT, BHCS

23.
WAS WELL CORED? NO ☐ YES ☑ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
17-1/2"	13-3/8 K55	61	0	1,208		Light 492	304	surface	
						Cl G 365	105		
							-70	bbls to pit	

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
n/a								

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) n/a				
(B)				
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
n/a	

29. ENCLOSED ATTACHMENTS:

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☐ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☑ CORE ANALYSIS ☐ OTHER:

30. WELL STATUS:

(5/2000)

(CONTINUED ON BACK)

RECEIVED
AUG 19 2008
DIV. OF OIL, GAS & MINING

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

33. SUMMARY OF POROUS ZONES (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
Indianola group	0				
Twist Gulch	1,100				
Arapien	1,792				
Twin Creek	3,650				
Navajo Ss	4,696		"Jurassic Nugget"		

35. ADDITIONAL REMARKS (Include plugging procedure)

Please see attached well sketch for plug placement.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) James Oursland TITLE Vice President of Engineering & Operations

SIGNATURE James Oursland DATE 8/18/2008

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

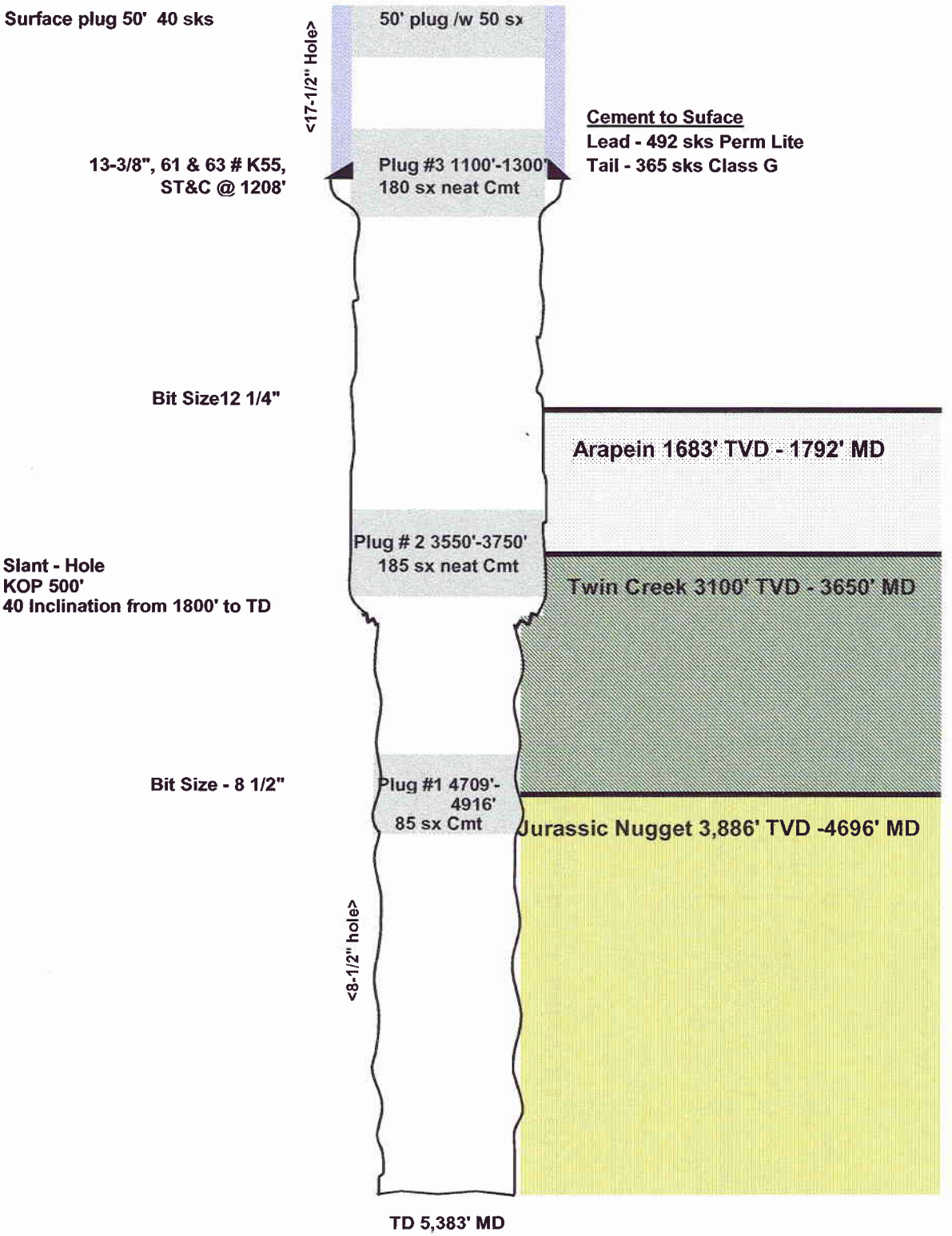
Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

ANSCHUTZ EXPLORATION CORPORATION WELLBORE SCHEMATIC	
SEC: 16-T11S-R4E 225' FSL; 527' FWL	WELL NAME: Hjorth Canyon 13-16 COUNTY, STATE: Utah County, Utah
TD: 6,105'	GROUND ELEVATION: 6,470' KB ELEVATION: 6,482' (surface cmt report 7-3-08)



Pathfinder Energy Services

Planning Report

PATHFINDER ENERGY SERVICES

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Utah County, UT (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Utah Central 4302		

Site	Sec.16-T11S-R4E				
Site Position:		***Northing:***	554,709.10 ft	**Latitude:**	39° 51' 22.727 N
From:	Lat/Long	**Easting:**	2,003,214.18 ft	**Longitude:**	111° 29' 18.782 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.01 °

Well	Hjorth Canyon Unit 13-16					
Well Position	**+N/-S**	0.0 ft	**Northing:**	554,709.10 ft	**Latitude:**	39° 51' 22.727 N
	+E/-W	0.0 ft	**Easting:**	2,003,214.18 ft	**Longitude:**	111° 29' 18.782 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,470.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	2/28/2008	12.24	65.44	52,295

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	68.00	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,833.3	40.00	68.00	1,727.6	167.4	414.3	3.00	3.00	0.00	68.00	
6,105.1	40.00	68.00	5,000.0	1,196.0	2,960.2	0.00	0.00	0.00	0.00	

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
KOP / Start Build 3.00°									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	3.00	68.00	600.0	1.0	2.4	2.6	3.00	3.00	0.00
700.0	6.00	68.00	699.6	3.9	9.7	10.5	3.00	3.00	0.00
800.0	9.00	68.00	798.8	8.8	21.8	23.5	3.00	3.00	0.00
900.0	12.00	68.00	897.1	15.6	38.7	41.7	3.00	3.00	0.00
1,000.0	15.00	68.00	994.3	24.4	60.3	65.1	3.00	3.00	0.00
1,100.0	18.00	68.00	1,090.2	35.0	86.7	93.5	3.00	3.00	0.00
1,200.0	21.00	68.00	1,184.4	47.5	117.6	126.9	3.00	3.00	0.00
10 3/4" Casing									
1,216.7	21.50	68.00	1,200.0	49.8	123.2	132.9	3.00	3.00	0.00
1,300.0	24.00	68.00	1,276.8	61.9	153.1	165.1	3.00	3.00	0.00
1,400.0	27.00	68.00	1,367.1	78.0	193.0	208.2	3.00	3.00	0.00
1,500.0	30.00	68.00	1,454.9	95.9	237.2	255.9	3.00	3.00	0.00
1,600.0	33.00	68.00	1,540.2	115.4	285.7	308.1	3.00	3.00	0.00
1,700.0	36.00	68.00	1,622.6	136.6	338.2	364.8	3.00	3.00	0.00
1,800.0	39.00	68.00	1,701.9	159.4	394.6	425.6	3.00	3.00	0.00
Start hold @ 1833.3' MD									
1,833.3	40.00	68.00	1,727.6	167.4	414.3	446.8	3.00	3.00	0.00
1,900.0	40.00	68.00	1,778.7	183.4	454.0	489.7	0.00	0.00	0.00
2,000.0	40.00	68.00	1,855.3	207.5	513.6	554.0	0.00	0.00	0.00
2,100.0	40.00	68.00	1,931.9	231.6	573.2	618.2	0.00	0.00	0.00
2,200.0	40.00	68.00	2,008.5	255.7	632.8	682.5	0.00	0.00	0.00
2,300.0	40.00	68.00	2,085.1	279.8	692.4	746.8	0.00	0.00	0.00
2,400.0	40.00	68.00	2,161.7	303.8	752.0	811.1	0.00	0.00	0.00
2,500.0	40.00	68.00	2,238.3	327.9	811.6	875.3	0.00	0.00	0.00
2,600.0	40.00	68.00	2,314.9	352.0	871.2	939.6	0.00	0.00	0.00
2,700.0	40.00	68.00	2,391.5	376.1	930.8	1,003.9	0.00	0.00	0.00
2,800.0	40.00	68.00	2,468.1	400.1	990.4	1,068.2	0.00	0.00	0.00
2,900.0	40.00	68.00	2,544.7	424.2	1,050.0	1,132.5	0.00	0.00	0.00
3,000.0	40.00	68.00	2,621.4	448.3	1,109.6	1,196.7	0.00	0.00	0.00
3,100.0	40.00	68.00	2,698.0	472.4	1,169.2	1,261.0	0.00	0.00	0.00
3,200.0	40.00	68.00	2,774.6	496.5	1,228.8	1,325.3	0.00	0.00	0.00
3,300.0	40.00	68.00	2,851.2	520.5	1,288.4	1,389.6	0.00	0.00	0.00
3,400.0	40.00	68.00	2,927.8	544.6	1,348.0	1,453.9	0.00	0.00	0.00
3,500.0	40.00	68.00	3,004.4	568.7	1,407.6	1,518.1	0.00	0.00	0.00
3,600.0	40.00	68.00	3,081.0	592.8	1,467.2	1,582.4	0.00	0.00	0.00
3,700.0	40.00	68.00	3,157.6	616.9	1,526.8	1,646.7	0.00	0.00	0.00
3,800.0	40.00	68.00	3,234.2	640.9	1,586.4	1,711.0	0.00	0.00	0.00
3,900.0	40.00	68.00	3,310.8	665.0	1,646.0	1,775.2	0.00	0.00	0.00
4,000.0	40.00	68.00	3,387.4	689.1	1,705.6	1,839.5	0.00	0.00	0.00
4,100.0	40.00	68.00	3,464.0	713.2	1,765.2	1,903.8	0.00	0.00	0.00
4,200.0	40.00	68.00	3,540.6	737.3	1,824.8	1,968.1	0.00	0.00	0.00
4,300.0	40.00	68.00	3,617.2	761.3	1,884.4	2,032.4	0.00	0.00	0.00
4,400.0	40.00	68.00	3,693.8	785.4	1,944.0	2,096.6	0.00	0.00	0.00
4,500.0	40.00	68.00	3,770.4	809.5	2,003.6	2,160.9	0.00	0.00	0.00
4,600.0	40.00	68.00	3,847.0	833.6	2,063.2	2,225.2	0.00	0.00	0.00
4,700.0	40.00	68.00	3,923.6	857.7	2,122.8	2,289.5	0.00	0.00	0.00
4,800.0	40.00	68.00	4,000.2	881.7	2,182.4	2,353.8	0.00	0.00	0.00
4,900.0	40.00	68.00	4,076.8	905.8	2,242.0	2,418.0	0.00	0.00	0.00
5,000.0	40.00	68.00	4,153.4	929.9	2,301.6	2,482.3	0.00	0.00	0.00
5,100.0	40.00	68.00	4,230.0	954.0	2,361.2	2,546.6	0.00	0.00	0.00
5,200.0	40.00	68.00	4,306.7	978.1	2,420.8	2,610.9	0.00	0.00	0.00

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well Hjorth Canyon Unit 13-16
Company:	Anschutz Exploration Corp.	**TVD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Project:	Utah County, UT (NAD27)	**MD Reference:**	WELL @ 6500.0ft (Original Well Elev)
Site:	Sec.16-T11S-R4E	**North Reference:**	True
Well:	Hjorth Canyon Unit 13-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.0	40.00	68.00	4,383.3	1,002.1	2,480.4	2,675.2	0.00	0.00	0.00
5,400.0	40.00	68.00	4,459.9	1,026.2	2,540.0	2,739.4	0.00	0.00	0.00
5,500.0	40.00	68.00	4,536.5	1,050.3	2,599.6	2,803.7	0.00	0.00	0.00
5,600.0	40.00	68.00	4,613.1	1,074.4	2,659.2	2,868.0	0.00	0.00	0.00
5,700.0	40.00	68.00	4,689.7	1,098.4	2,718.8	2,932.3	0.00	0.00	0.00
5,800.0	40.00	68.00	4,766.3	1,122.5	2,778.3	2,996.5	0.00	0.00	0.00
5,900.0	40.00	68.00	4,842.9	1,146.6	2,837.9	3,060.8	0.00	0.00	0.00
6,000.0	40.00	68.00	4,919.5	1,170.7	2,897.5	3,125.1	0.00	0.00	0.00
TD at 6105.1									
6,105.1	40.00	68.00	5,000.0	1,196.0	2,960.2	3,192.7	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,216.7	1,200.0	10 3/4" Casing	10-3/4	12-1/4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.0	500.0	0.0	0.0	KOP / Start Build 3.00°
1,833.3	1,727.6	167.4	414.3	Start hold @ 1833.3' MD
6,105.1	5,000.0	1,196.0	2,960.2	TD at 6105.1

SIDEWALL CORE DESCRIPTIONS

Schlumberger cut 26 sidewall cores with a wireline rotary coring tool on 22 July 2008. Cores were recovered for each core attempted and overall quality of the cores was good. Core depths are wireline log depths. (Wireline depth + 4 ft = rig depth.)

After the cores were wiped clean, the whole cores were examined for external fluorescence with a handheld UV light in the coring truck darkroom. No significant hydrocarbon fluorescence was found. External spotty yellow fluorescence in the Twin Creek porosity zone 4326' – 4337' was later determined to be uniform yellow mineral fluorescence on fresh breaks.

No hydrocarbon odor was detected. A slight odor of possible sulfur was noted in the Navajo and in the Twin Creek porosity zones. When jars containing core chips were reopened the odor seemed more like the somewhat unpleasant smell of the drilling mud than H2S or related sulfur compounds.

The cores did not bleed oil or gas. The core specialist noted that core 13 broke or was about to break into multiple disks similar to those he often sees when coring tight gas sands. He referred to these as "gas fractures".

Fresh breaks of the cores felt cool to the cheek, suggestive of water.

Small chips of the cores were then taken from each core for examination on site. The whole cores were then wrapped in Saran Wrap and foil and placed in glass jars. The jar lids were sealed with wax. The cores were sent by FedEx to Omni Labs in Denver.

The small fresh core chips were examined for fluorescence and stain with a Corvascope (combination UV box/microscope). A chip from each core was then cut with trichloroethylene and examined under UV light. Results for fluorescence, stain, cut fluorescence, and fluorescent halo are described below and also tabulated in a spreadsheet in this report. Under white light, there were no cuts or oil rings visible.

Visual porosity was rated with a research-grade Zeiss 10-100X microscope.

WATTON CANYON MBR.
TWIN CREEK LS.

Core 1 3828.5'.

Marlstone; brownish gray; cryptocrystalline limestone appearance; calcareous, chips disintegrate in acid to brownish gray argillaceous flakes and to lesser light gray flakes with silty appearance; stains in Alizarin Red except for dark laminae; dense, no porosity visible; numerous dark gray laminae in whole core. No show.

Core 2 3929.5'

Limestone; pale yellowish brown; cryptocrystalline; minor brownish gray argillaceous/silty and light gray very fine grained sandy insoluble residue; stains in

SIDEWALL CORE DESCRIPTIONS

Alizarin Red; dense, no porosity visible; several 0.5 to 1.0 mm filled fractures cutting whole core.

Show: No fluorescence. No stain. Slight cut fluorescence was slow nonstreaming bluish yellow, drying to trace bluish yellow fluorescent halo.

RICH MBR.
TWIN CREEK LS.

Cores 3 – 13, 26: 4326', 4327', 4328', 4329', 4330', 4331', 4332', 4333', 4334', 4335', 4336', 4337.5'

Limestone; mottled/spotted pale yellowish brown, brownish gray, and lesser white; upper fine to upper medium grained oolitic packstone/grainstone; quite clean, minor very fine to lower fine grained sand/silica and trace black irregular flecks in insoluble residue; 90% staining in Alizarin Red, some prolonged effervescence along with incomplete staining in Alizarin Red indicates minor microcrystalline dolomite lining pores and minor dolomitized ooliths; rare micro-pyrite; several styolites, apparently slickensided at 4332'; fair visible porosity in bottom core at 4337.5', otherwise good to excellent vuggy and partly oomoldic porosity.

Show: Medium bright uniform yellow mineral fluorescence. No oil stain. Overall slight cut fluorescence was slow, nonstreaming bluish yellow and dried to trace to weak bluish yellow fluorescent halos.

GYPSUM SPRING MBR.
TWIN CREEK LS.

Core 25: 4656.5'

Siltstone/Sandstone; light brownish gray; silt to very fine grained sand; firm; dolomitic, no staining in Alizarin Red; partly argillaceous, tests negative for anhydrite; slight vuggy porosity.

Show: No fluorescence. No stain. Trace very slow nonstreaming bluish yellow cut fluorescence dries to trace bluish yellow fluorescent halo.

SIDEWALL CORE DESCRIPTIONS

NAVAJO SS.

Cores 14 – 16	4700', 4705', 4728'
	Sandstone; white to very light gray; fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowth common, abundant glassy broken grains; well sorted; hard both to tweezers and to hammer when taking chips; silica cement, no staining in Alizarin Red; opaque pure white dispersed patches and lining in pores common, possibly microcrystalline quartz—tests negative for calcite, dolomite, and anhydrite; clean; no to trace small patches of micro-pyrite; non-uniform porosity, completely tight streaks mixed with fair secondary porosity that is often slightly vuggy; occasional unaltered intergranular porosity associated with larger grains.
Show:	No to trace faint patchy blue fluorescence. No stain. Trace slow non-streaming bluish yellow fluorescence dries to slight to trace bluish yellow fluorescent halos.
Cores 17 - 18	4784', 4822'
	Sandstone; very pale orange (10YR 7/2); fine grained with occasional dispersed upper medium grains; subangular, subround, larger grains round; faceted grains due to quartz overgrowths common, abundant glassy broken grains; well sorted; hard; silica cement; no staining in Alizarin Red; dispersed opaque white grain-size patches common, possibly microcrystalline quartz; clean; rare pale greenish gray clayey grains; non-uniform fair porosity.
Show:	No to slight fluorescence. No stain. Virtually no to trace slow nonstreaming bluish yellow cut fluorescence dries to trace to slight bluish yellow fluorescent halos.
Core 19	4865'
	Sandstone; very pale orange (10YR 7/2); fine to increased medium grained; subround, round; well sorted; medium hard; silica cement; decreased quartz overgrowths and fewer glassy broken grains; dispersed opaque white grain size patches and intergranular fill, possibly microcrystalline quartz; clean; fair+ visible porosity.
Show:	Slight weak streaky bluish yellow cut fluorescence. No stain. Trace slow nonstreaming bluish yellow cut fluorescence dries to trace bluish yellow fluorescent halo.

SIDEWALL CORE DESCRIPTIONS

Cores 20 - 24	4905', 4955', 5012', 5076', 5194.5',
	Sandstone; very pale orange (10YR 7/2), becoming tinted moderate orange pink (5YR 7/4) downhole; upper very fine to fine grained, few lower medium round grains particularly at 5194.5'; subangular, subround; well sorted; hard; silica cement, faceted grains due to quartz overgrowth common, abundant glassy broken grains; dispersed white opaque grain-size patches and intergranular fill, possibly microcrystalline quartz; clean; faint medium dark gray lamination; trace micro-pyrite; fair visible porosity.
Show:	No fluorescence. No stain. No cut fluorescence; solvent dries to no to trace bluish yellow fluorescent halos.

Anschutz Exploration Corporation
Hjorth Canyon Unit 13-16

SIDEWALL CORE SHOW EVALUATION

Core	Depth	Fluorescence				Oil Stain				Cut Fluorescence				Fluorescent Halo	
		Overall	Intensity	Distribution	Color	Overall	Intensity	Distribution	Color	Overall	Speed	Streaming	Color	Intensity	Color
Twin Creek															
1	3828.5	None				None				None				None	
2	3929.5	None				None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
Twin Creek Porosity															
3	4326.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
4	4327.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
5	4328.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
6	4329.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
7	4330.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
8	4331.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Trace	Blue-Yel
9	4332.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
10	4333.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
11	4334.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
12	4335.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
13	4336.0	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel
Navajo Ss															
14	4700.0	Trace	Faint	Patchy	Blue	None				Trace	Slow	No	Blue-Yel	Slight	Blue-Yel
15	4705.0	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
16	4728.0	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
17	4784.0	None				None				None				Trace	Blue-Yel
18	4822.0	Slight	Weak	Streaks	Blue-Yellow	None				Trace	Slow	No	Blue-Yel	Slight	Blue-Yel
19	4865.0	Slight	Weak	Streaks	Blue-Yellow	None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
20	4905.0	None				None				None				Trace	Blue-Yel
21	4955.0	None				None				None				Trace	Blue-Yel
22	5012.0	None				None				None				None	
23	5076.0	None				None				None				None	
24	5194.5	None				None				Trace	Slow	No	Blue-Yel	Trace	Blue-Yel
Gypsum Spring Mbr of Twin Creek--Loss Zone															
25	4656.0	None				None				Trace	Very Slow	No	Blue-Yel	Trace	Blue-Yel

Anschutz Exploration Corporation
Hjorth Canyon Unit 13-16

SIDEWALL CORE SHOW EVALUATION

Core	Depth	Fluorescence				Oil Stain				Cut Fluorescence				Fluorescent Halo	
		Overall	Intensity	Distribution	Color	Overall	Intensity	Distribution	Color	Overall	Speed	Streaming	Color	Intensity	Color
Complimentary Core--Twin Creek Porosity															
26	4337.5	Mineral	Med Bright	Uniform	Yellow	None				Slight	Slow	No	Blue-Yel	Slight	Blue-Yel